DOCUMENT RESUME

ED 159 594 CS 003 951

AUTHOR Thomas, Laurie F.; Harri-Augstein, E. Sheila
TITLE The Self-Organised Learner and the Printed Word.
INSTITUTION Brunel Univ., Uxbridge (England). Centre for the Study of Human Learning.
SPONS AGENCY Social Science Research Council, London (England).
PUB DATE [77]
NOTE 211p.; Not available in hard copy due to marginal legibility of original document.

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS *Action Research; Evaluation Methods; Foreign Countries; Higher Education; Independent Study; *Individual Development; *Learning Processes; Program Development; Program Evaluation; Questionnaires; *Reading Instruction; *Reading Research; Reading Skills; *Research Methodology; Student Attitudes; Teaching Techniques

ABSTRACT

Five separate papers comprise this report of a project in which researchers developed and evaluated methods for helping young adults enhance their use of reading as a learning skill. The first paper discusses tools designed to increase readers' awareness of what they do as they read, teaching approaches used to promote skill development, and evaluation procedures. The next three papers report on studies (based on action research methods) of the way the following three approaches increased students' capacity for self-organized learning: the structured approach, involving a sequence of supervised instructional modules; the guided approach, in which students chose their own activities; and the freedom-to-learn approach, in which students explored their attitudes toward learning with the aid of repertory grids and received minimal instruction. The final paper, which discusses project results and their implications, notes that the researchers moved from an orthodox to a conversational research design, thus providing a significant new paradigm for conversational research in human learning. Numerous tables are presented throughout the report, as well as such materials as a reading questionnaire and repertory grids completed by students. (GW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED159594

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

PROJECT SPONSORED
BY S.S.R.C.

CENTRE FOR THE STUDY OF HUMAN LEARNING

THE SELF-ORGANISED LEARNER AND THE PRINTED WORD

Paper 1 -

THE TEACHING OF READING-FOR-LEARNING

Paper 2 -

THE LEARNING CONVERSATION : A STRUCTURED APPROACH

Paper 3 -

THE LEARNING CONVERSATION : A GUIDED APPROACH

Paper 4 -

THE LEARNING CONVERSATION : FREEDOM TO LEARN

Paper 5 -

ZEN AND THE TEACHING OF READING-FOR-LEARNING:
TOOLS, PROCEDURES, LANGUAGE AND CONVERSATION.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Laurie F. Thomas; E. Sheila Harri-Augstein

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex.

Laurie F. Thomas &
E. Sheila Harri-Augstein.

CS013957

Programme Director: Dr. Laurie Thomas (1)
Main Investigator: Dr. E. Sheila Harri-Augstein (2)
S.S.R.C. Research Fellow: Nicholas C. Farnes (3)

Early Exploratory Work 1964-1969

Director and Main Investigator assisted by Cameron McKay (11)

Main Projects 1969-1973

Project 1 - Director and Main Investigator

Project 2 - Director, Main Investigator and Research Fellow
assisted by:-
Tim Deans (9), Steven Mendoza (9), Cliff McKnight (6),
Nicholas Pope (9) and Fraser Reid (7)

Subsequent (Follow-up) Studies 1972 —

Director and Main Investigator with:-

Dr. Len Chapman (5), Tim Deans (9), Cliff McKnight (6),
Fraser Reid (7), David Pendleton (4), Maureen Pope (9)
Susan Lipshitz (8), Steven Blewitt (10)

Technical Assistance -

Equipment Development .. Harry Moore
Care and Maintenance Arthur West

Secretarial Assistance - Mrs. Joan Kenny
Mrs. Vi Gathercole

1. Director of the Centre for the Study of Human Learning
Reader in Psychology at Brunel University

2. Invited to join Loughborough College of Education as Senior Lecturer in Education. Later re-joined the Centre as Deputy Director and is also part-time member of staff at the Open University.

3. Invited to join the Reading Development Course team at the Open University. Later joined the staff of the Institute of Technology at the Open University. Post-graduate, Brunel University.

4. Joined Leeds Polytechnic as Lecturer in Education. Post-graduate, Brunel University.

5. Whilst on sabbatical leave from Trent Park College of Education, Middlesex Polytechnic. Post-graduate, Brunel University.

6. Joined Goldsmiths College as Lecturer in Psychology, Post-graduate, Brunel University.

7. Joined Plymouth Polytechnic as Lecturer in The Learning Resources Centre, Post-graduate, Brunel University.

8. Joined Student Counselling Services at Sussex University Post-graduate, Brunel University.

9. Post-graduate, Brunel University

10. Post-graduate, Sussex University

11. Computing Consultant, now at Berkeley, California.

Acknowledgements

Members of the Centre would like to take this opportunity for acknowledging all those people - administrators, teachers and students - who have offered the facilities, given the time, financed the resources and suffered the frustrations of providing us with such rich opportunities to learn about reading as a learning skill.

In particular, those at:-

Brunel University and the Social Science Research Council

and the staff and students of:-

Dover Girls Grammar School

Simon Langdon Girls Grammar School at Canterbury

Canterbury Technical College

Kings School, Canterbury

Loughborough College of Education

Gipsy Hill College of Education

Brooklands Technical College

The Polytechnic of Central London

Kingston Polytechnic

High Pavement School, Nottingham

Thorpe Acre County Junior School, Loughborough

Limehurst Girls High School, Loughborough

Garendon Boys High School, Loughborough

ABSTRACT

This S.S.R.C. sponsored project has focused upon two related areas of educational concern:-

(i) How to help young adults to improve their ability to learn by reading.

(ii) How to investigate and measure their consequent ability to organise their own learning.

Three main studies were carried out by the research team within different educational contexts; a predominantly male College of Education offering a B.Ed. course as a preparation for teaching in secondary schools; a predominantly female College of Education specialising in courses for primary education, and; a Technical College offering Advanced Level and O. and H.N.C. courses mainly in science and engineering subjects. The different experiences derived within each study were interpreted within an action-research framework. Viewed retrospectively, these studies can be seen to have led to different approaches for encouraging learning. Together they combine to offer a common theme: a new paradigm for 'conversational' research in human learning.

Action research led to a methodological dilemma which was subsequently resolved by pioneering a 'conversational' approach. The encouragement of greater self-organisation in learning inevitably leads to greater divergency in individual achievement. Statistically-based 'before-after' experimental procedures lose their relevancy and the investigators gradually moved away from the 'physical science' paradigm of research towards more participative 'conversational' methodologies.

The 'subject matter' (people learning), is accepted as a node of independently initiated action. Empirical investigation becomes a co-operative effort to observe and interpret the learning experience and bring this under review. The subject's unique position as observer of his internal events is recruited, whilst the researcher with the technology at his disposal, observes and records the subject's overt behaviour rigorously. This combined experiential and behavioural description provides a richness, personal validity and rigour to the explanatory enterprise. Thus conversational methodology can be as systematic and rigorous as the more orthodox methods, although different in kind.

Investigation of the complex set of issues raised by the two original areas of concern, within the different educational contexts, has revealed a need for three inter-related conversational methodologies; Life Conversation, Tutorial Conversation and the Learning-to-Learn Conversation. These illuminate the traditionally intuitive skills of effective teaching; and offer a backing technology of hardware and software (a system of techniques, procedures and equipment) with which to further articulate those teaching conversations which are designed to encourage students to learn and to learn how to learn, in ways that are meaningful in life.

The results have been startling; both in an orthodox 'before and after', and 'follow-up' sense, and in the more humanistic 'conversational' sense. Viewed traditionally, the studies show that:-

(i) the Reading Recorder can produce evidence about reading behaviour which has not previously been available;

(ii) together with the other conversational tools, the repertory grid, the purpose taxonomy, the flow diagram technique, and the taxonomy of reading problems, the record of reading behaviour can be used to help students who so choose:-

(a) to extend the range of learning purposes which can be pursued through reading,

(b) to become more effective in achieving any or all of these purposes,

(c) to combine these skills into new flexible strategies for using reading as a learning skill,

(d) to recruit these new strategies into their academic pursuits, thereby improving their performance as measured on the educational institutions' existing assessment procedures.

Fig.1 shows the relationship between reading performance and academic performance; and how these improved during the investigation.

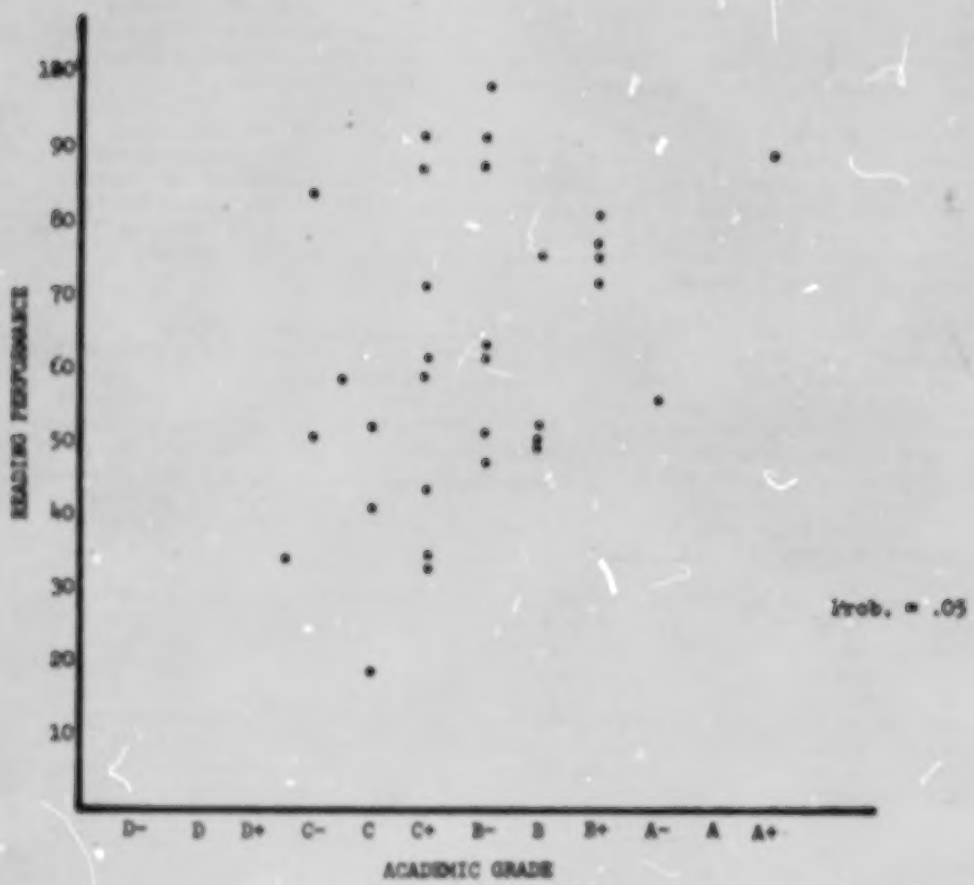


Fig.1 THE RELATIONSHIP BETWEEN READING FOR LEARNING PERFORMANCE AND SUBSEQUENT ACADEMIC GRADE

When students did not so choose to go along with the investigators' purposes, no neat statistically viable 'results' were obtained. Viewed conversationally, the results of these studies are located elsewhere. The traditional results are seen to be 'special effects' which can be achieved when students and investigators set out to use the new psychological tools and procedures to pursue mutually agreed objectives. Each conversation differs as the tools and procedures are used responsively to achieve the required 'results'. The fact that these results can be achieved is evidence that some insight exists into the psychological mechanisms at work and that the tools and procedures enable these to be influenced. But no fixed routine of instruction emerges as a successful method for influencing everyone in the same way.

What does emerge is greater insight into the whole conversational technology whereby students and investigators together could negotiate mutually acceptable purposes and then pursue these with increasing clarity and success. Thus the results lie in the conversational methodology itself.

(i) The Psychological Tools

As a wider variety of demands were made of the awareness-raising tools and procedures, these were adapted and developed to increase their range flexibility and sensitivity.

(ii) The Reading for Learning Model

Insight into the psychological mechanisms was provided by a heterarchical model of the process of reading-for-learning. This 'Purpose-Strategy-Outcome-Review' skill-based model was refined during the investigation.

(iii) The Process Language

The language in which the conversation is conducted must be personally relevant, emerging out of the individual's own experience, both previous and ongoing. The tools were used as starting points to negotiate this language within the framework offered by the model. The language primarily involves a meta-description of 'process' and as such is distinguished from though related to, the object language describing content.

(iv) The Learning Conversation

The overall conversation about learning was seen to usefully divide into three related segments: the Life Conversation, the Tutorial Conversation and the Learning-to-Learn Conversation. Each of these was seen to relate to the other but each had its own focus of attention. In the learning-to-learn conversation this is the learning skill; in the tutorial conversation the focus is on the content of learning and, in the life conversation the personal context and relevance of the learning is reviewed.

(v) The Learning-to-Learn Conversation

This is concerned with raising the learner's awareness of his own processes, and with bringing these under review. Three intertwining dialogues combine to mirror these processes so that the learner is supported through the traumas of change and learns to identify independent referents for assessing his progress in his own terms. This skill-based conversation results in a greater range, flexibility and effectiveness in the use of reading as a learning skill. Increased awareness of his competence enables the learner to negotiate realistic and flexible learning contracts.

(vi) The Tutorial Conversation

This gives emphasis to the negotiation of the 'learning contract' about the subject matter. The conversation aims at making the contract explicit, in all its forms and aspects. The purpose is negotiated, the strategy is planned and the criteria by which success is assessed are defined. As the learning contract becomes implemented, learning weaknesses are referred to the Learning-to-Learn Conversation and inappropriate purposes are re-negotiated in the Life Conversation. The result is the articulation of a learning contract which is both challenging and flexible for the individual. Too often the student is offered a standard contract and not understanding the small print nor the implicit clauses fails to meet his seemingly accepted obligations.

(vii) The Life Conversation

The Life Conversation alerts the individual to how his immediate learning purposes relate to his longer-term goals. Lack of counselling can build up a system of referents against which shorter and longer term purposes can be developed and aligned.

(viii) The Self-Organised Learner

Internalising these Conversations leads to greater self-organisation. By developing the capacity to articulate these Conversations for himself, the learner gradually takes over control of his own learning, in the short and long term.

(ix) Implications for Research into Human Learning

Traditional and Conversational methods of research can be seen as opposite ends of a continuum. The job of observation and measurement exists across the continuum: what varies is; who sets the criteria, records the measures, and interprets the results? At one end of the continuum the researcher contracts to take all responsibility and treats the learner as an object to be manipulated. Along the continuum the contract is shared in various ways, the learner takes on more and more of the responsibility and the researcher takes on a monitoring role. Conversational procedures show how individual change within the learning situation can be reliably and validly measured. Participative methods involving Learning Conversations provide a new paradigm for the human learning experiment.

(x) Implications for Education

In using conversational techniques it immediately becomes clear that non-trivial participant investigations always yield an educational side effect. If significant results are achieved the subject participant is not only aware of these but of the process by which he has actively contributed to their discovery and construction. This is an ideal learning opportunity and is recognised as such by most participants.

Conversational results yield three sources of data which become a resource for effective teaching/learning transactions:-

(a) The specific results of the investigation may be useful in a given topic. The identification of a wide range of idiosyncratic purposes for reading and of effective tactics and strategies by which these can be achieved provides a resource for reading specialists engaged in developing young adults' competency in the use of reading as a learning skill.

(b) The emphasis given to 'process' by the conversational use of awareness-raising tools has repercussions for the development of self-organisation in learning. It results in the internalisation of a meta-language and a learning-to-learn conversation which enables the learner to transcend the content world of the subject matter, and create for himself alternate ways for effectively interacting with his chosen resource.

(c) The overall result encompassing an overall model of the Learning Conversation leads to an appreciation of how purposes defined within the space of an individual's life needs, become incorporated into flexible yet explicit learning contracts, which are constantly monitored for weaknesses in learning skills, so that these can be brought under review.

This decade marks yet another crossroad in the changing pattern of educational ideologies. Conservative tenets embodying a pessimistic view of man have achieved at best a status quo between man and his environment and at worst has resulted in alienation and stunted growth of the individual. A science of conversational techniques has been shown to be capable of opening up new perspectives and although still a very young science offers a substantial step towards realising the more radical tenet that 'man can make man'. This action-based research investigation contributes evidence within the expanding conversational area of research (Lorenz, Bruner, Kelly, Bannister, Pask, Paulo Friere), to show how man can learn to interact more effectively with the resources which make up his environment.

PROJECT SPONSORED
BY S.S.R.C.

THE SELF-ORGANISED LEARNER
AND
THE PRINTED WORD

PAPER 1 - THE TEACHING OF READING-FOR-LEARNING

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex

Laurie F. Thomas
E. Sheila Harri-Augstein

CONTENTS

		Page
1.	INTRODUCTION	3
1.1.	The Problems of Learning by Reading	3
1.2.	The Need for Awareness	3
1.3.	The Teaching Strategy and Problems of Measurement	4
2.	THE MODEL AND THE TOOLS	4
2.1.	The Model of the Process	4
2.1.1.	Components of the Model	4
2.1.2.	Levels of Organisation	5
2.2.	The Tools	6
2.2.1.	The Reading Recorder	6
2.2.2.	The Flow Diagram Technique	6
2.2.3.	The Kelly Grid Technique	7
2.2.4.	The Purpose Taxonomy	7
2.3.	The Four Tools	7
3.	APPROACHES TO TEACHING	7
3.1.	Assumptions about Instruction	7
3.2.	Self-Organisation in Learning	8
3.3.	Three Methods of Teaching	8
3.4.	Structure and Freedom	9
4.	THE RESEARCH STRATEGY AND PROBLEMS OF MEASUREMENT	10
4.1.	Problems of Measurement	10
4.2.	The Research Strategy	11

THE TEACHING OF READING-FOR-LEARNING

1. INTRODUCTION

This project has been concerned with two related issues. How to help students improve their learning-to-learn skills with particular reference to reading, and how to study and evaluate their consequent ability to define their own reading purposes and pursue these effectively in their own ways.

1.1. The Problems of Learning by Reading

Earlier research findings (1) have shown that most students and professional adults, even those labelled successful, operate well below their Reading-for-Learning potential. Only vaguely aware of how they read, they experience difficulty in varying their methods to suit their purposes. Reading has become habitual; behaviour has stabilised into self-perpetuating cycles which are difficult to break. This leaves the reader with a limited range of partially developed skills. Awareness of process is a prerequisite for Learning-to-Learn, i.e. for learning to break these limiting habits, and for increasing the range and effectiveness of reading skills. People usually find this impossible without assistance.

To help students improve their Reading-for-Learning skills, a generative model of the reading process and a series of tools for creating differing types of awareness have been developed. In using this model and tools they were often confronted with the inadequacy of their reading, and they tended to become bewildered, anxious and defensive. Helping students to become aware of and to develop their skills, inevitably involved supporting them through an emotional crisis. This aspect of the problem was explored by using different teaching approaches.

As the project developed it became increasingly clear that the evaluation of the short and longer term results of participative teaching posed special problems for the researcher. This involved the development of a more adequate paradigm for such an investigation.

1.2. The Need for Awareness

An essential step in improving Reading-for-Learning skills is to increase the reader's awareness of what he is doing as he reads. For the unpractised, self-observation during reading is immensely difficult. It is necessary to acquire the skill of dividing one's attention between the meaning of the text and how one is attributing that meaning to it. This skill in self-observation derives from a language which is used to describe and analyse one's reading experience and behaviour. In these studies, our approach has been to offer a Model which provides such a language and also to offer tools which reflect back different aspects of his process to the reader. These tools can be considered as consciousness-raising devices. The Reading Recorder provides a record of how a text is read. This record offers the reader the opportunity to introspect the process in which the eyes move over the page. The Flow Diagram Technique provides an opportunity for the reader to display the structure of meanings he is attributing to the text. This increases his awareness of how he develops and uses meanings. The Kelly Repertory Grid Technique reveals the dimensions of thought and feeling. We have used it to help the reader explore his ideas about learning and about different types of text. The Purpose Taxonomy is also essentially an awareness creating device; the Reading-for-Learning Exercises were based on this Taxonomy. During the project these tools were further refined and other tools were developed and tested. A summary of these findings is provided in Paper 5.

1.3. Teaching Strategy and Problems of Measurement

In this project, three strategies of teaching were used. These varied from a very structured approach using programmed materials, to a more loosely structured group based method, to an almost completely unstructured one to one tutoring approach. Teaching approaches were varied in order to explore how different mixes of support and guidance lead to different types of skill in Learning-to-Learn. Within these different strategies of teaching the basic method has remained constant. The tools have been used to offer various types of feedback to the reader about his performance; at the same time encouraging him to map this back onto the general model in such a way that he becomes more aware of the significance of what he is doing. In our attempt to create effective feedback, we were faced with a research methodology problem; the feedback consists of various measurements of performance, but, simultaneously with this, the researcher needs to measure the changes he is producing. Therefore, in the early stage of the project, a problem arose about how to measure in order to provide feedback, and how to measure in order to provide evidence about the changes in the Reading-for-Learning skill that was being achieved. Initially, this problem was overcome by combining the feedback measures and the assessment measures into one event. As the project progressed it was realised that this was inadequate. Each problem was of a different order. When students were encouraged to seek their own feedback, the experimenter lost control of the measures. What was recorded were assessment measures based on the experimenters criteria of success and these were often irrelevant from the learners point of view.

Hand in hand with selecting their own feedback learners became more disciplined in assessing their own performance. The experimenters tended to rely more on subjective reports and less on their own measures for assessing change. The result of this has been to change the method of reporting. Earlier work is reported in the form of a traditional experimental design. Later work is presented as Case Studies, with an increasing emphasis on a conversational paradigm of research.

2. THE MODEL AND THE TOOLS

Tools for exploring the reading process acquire value by operationalising a theory about it. The thinking which conditioned the development of the tools, was based on an early version of the theory. Thus the model of the process and the tools for exploring it, developed in parallel and interactively.

2.1. The Model of the Process

If consciousness arises from articulating experience to oneself, then this necessarily involves a mode of description. Enactive, iconic and symbolic descriptions contribute to states of awareness (2). A model of the reading process provides a language for the articulation of reading experience, encompassing the three modes of description.

2.1.1. Components of the Model.

Figure 1 is an attempt to sketch out the major components of a 'Purpose-Strategy-Outcome-Review' model as it applies to Reading-for-Learning. Reading is considered as an active generative process, which operates at several levels simultaneously. The major components of the process at any given level are considered to be:

PURPOSE Prior knowledge, Skills, Needs, Roles, Expectations.

STRATEGY Structures of Meaning, Reading Behaviour.

OUTCOME Reading Outcome, Changes in Thoughts or Feelings, Oral and Written Outcomes.

REVIEW Evaluation of Outcome and of Reading Competence.

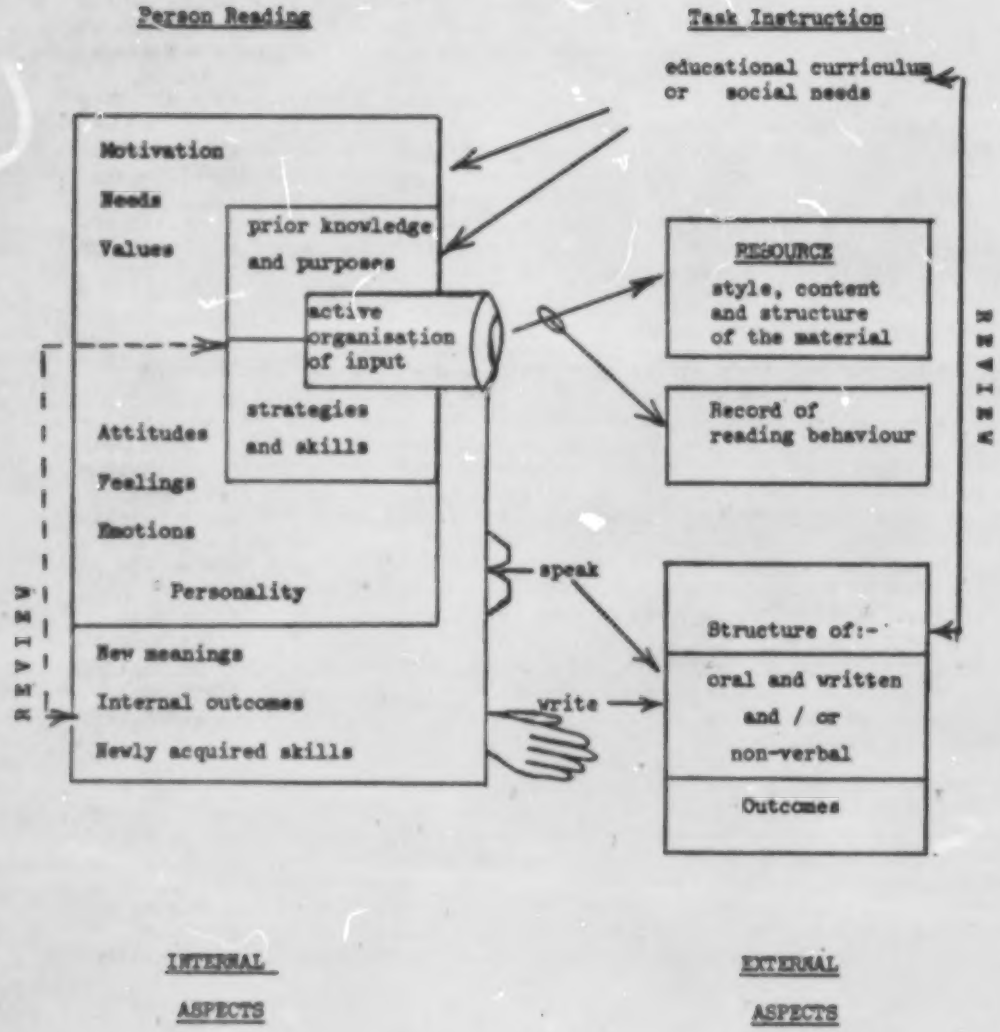


Fig. 1 A MODEL OF THE READING-FOR-LEARNING PROCESS

Although purpose partially determines strategy and this influences outcome they must be seen as co-existing. The purpose is never finally clarified until the final outcome is achieved.

As a person reads, he is predicting meanings that will be contained in the words on the page. The Strategies and Tactics of Reading Behaviour relate to Prior Knowledge and Skills and to Reading Purposes. Reading Behaviour also relates to the Structures of Meaning which a person generates. These structures are provoked by the words on the page, though the meaning itself is not on the page. The primary outcomes of reading are the changes which take place in what we think, know and feel. These changes must serve as the ultimate reference of whether there has been any reading outcome. Any oral and written Reading Outcome has structure, which can be observed and thus directly measured. This plays a crucial role as the criteria against which the reading process can be assessed. Thus:- improvement of Reading Competence depends on monitoring the matrix of Purposes, Strategies and Outcomes and Reviewing their effectiveness. This review can then be used to improve subsequent attempts at reading which should in turn be evaluated, creating a progressive and cumulative process of change. (In practice review is usually non-existent leading to an absence of awareness, and to an over-stabilisation of restricted reading skills.)

2.1.2. Levels of Organisation.

During reading, one's awareness of meaning moves up and down through different levels or size of meaning unit. Sometimes an unfamiliar word obtrudes making one aware of the actual letter clusters. At the other extreme one can be skimming the words on a page in such a way that one isn't even aware of the sentences, nor the paragraph structure. This hierarchical organisation of the reading process means that at different times one may be consciously tracing out spelling patterns, grammatical structures, or the semantic relationships between one sentence and another. Eventually, one may some awareness of the semantic structures extending from chapter to chapter which make up the whole impact of a book. These activities represent different levels of organisation or different systems of meaning. The learner has to learn to think about the model of the reading process as co-existing at all these levels. The process of learning to read and reading-to-learn can be understood in terms of how units of meaning get linked together, smaller units into larger units, and so on. During reading one is continually moving up and down through this network of organisation.

Having once recognised that reading is organised hierarchically one can select a certain aspect of the model and explore this. For instance, one can explore a hierarchy of purposes: how the detailed break-down of one's overall learning purpose can signpost specific reading purposes. One can explore the meaning structure of a text in as many different ways as one can develop purposes for doing so. Thus, one aspect of learning skill is the ability to articulate a wide variety of reading purposes. Reading behaviour can be explored: one can analyse how the individual words get read, or how a reader is tracing out the relationships between sentences; or the relationships between paragraphs. One can identify a hierarchy of reading strategy and tactics. Similarly, in terms of outcome, one can be interested in what a sentence means or in the impact of the whole book. One can have a hierarchy of outcomes which demand different types of testing or self-assessment procedures. Therefore, each aspect of the model is, in itself, hierarchical; but different components of the process at any given level relate to each other, producing in effect a "hierarchy of models" at different levels of organisation. In thinking about the reading process one must be prepared to move between levels within one component of the model, or to move within one level from one component to another. The ability to do this is one aspect of self-organisation in Reading-for-Learning.

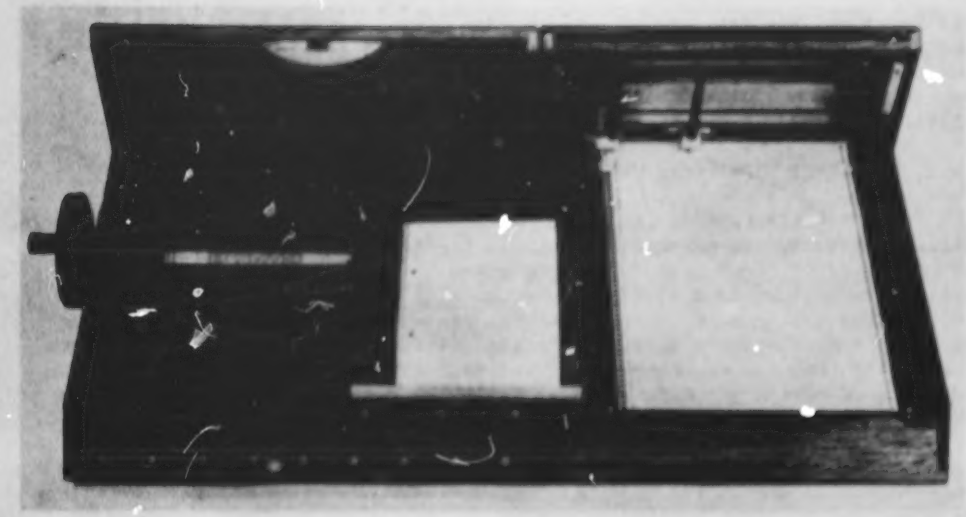


Fig. 2 The Reading Recorder

2.2. The Tools

Although the model provides a conceptual framework for awareness of process, conceptualisation is not enough. The attribution of meanings arising from direct experience, on to the components of the model, depends on the operation of specific procedures. A series of tools has been developed for the attribution of meaning to purpose, strategy and outcomes, at varying levels of organisation. These tools have been designed to mirror the reader's experience back to him. This heightened awareness enables the reader to break out of his habitual mode of operating.

2.2.1. The Reading Recorder (Figure 2)

If you as reader were now asked how you had read this article up to this point, you might have considerable trouble. Your description may be no more detailed than:- "Oh, I was skimming it through", "I was reading it in detail" or "I was so bored I found it difficult to keep going". Methods of reading are changed by bringing them under review. The reader needs to become more perceptive about how he moves his eyes over the page. The Reading Recorder was developed to record how a text is read; the hesitations, the changes in pace, and the forward and backward tracking. This information is offered as feedback, thus creating a much more sensitive perception of the whole reading behaviour. The design of the reading recorder has been published elsewhere (3).

2.2.2. The Flow Diagram Technique

The significance of reading behaviour cannot be fully understood until the structure of the text can be described in terms that relate to what the reader is doing. A descriptive technique was needed to show how meaning flows through the sequence of words. The Flow Diagram Technique was developed for this purpose. However, there is no way of getting an objective description of the structure of the text: all that can be done is encourage a number of 'experts' to draw flow diagrams of the text, and to argue out their differences until an authentic version of "shared subjectivity" emerges. This has the authority

and only the authority of the people who have produced it. Having recognised this essential subjectivity of meaning, the Flow Diagram Technique was used to enable the reader to display the meanings which he was attributing to the text. Comparison was then made between the reader's Flow Diagram and that of the experts. Further details of the Flow Diagram Technique are available in published (4) and in videotape (5) form.

2.2.3. The Kelly Repertory Grid

There was also a need for a tool with which to explore the prior knowledge, skills, attitudes and assumptions which a person brings to a piece of text. The Repertory Grid was used for this purpose. This is a technique for eliciting the dimensions of a person's thinking and feeling, i.e. for articulating the terms in which he approaches an area of knowledge. During the project developments were made in its use for exploring different aspects of learning that can be achieved by reading. It has been used to explore purposes, to reveal the dimensions in which the reader thinks about purposes for reading, and the attitudes and feelings a person brings to a given text.

By encouraging students to exchange personal constructs and to exchange whole Repertory Grids, the tool has been used for achieving change; extending the range and refining Reading Purposes, Strategies/tactics and Outcomes of reading. The modifications and uses which were developed for the Kelly Grid, are reported in greater detail elsewhere (6).

2.2.4. The Purpose Taxonomy

In order to sharpen the reader's awareness of purpose, and to help him evaluate the outcome of reading, a Purpose Taxonomy was developed. This was a modification of Bloom's Taxonomy of Educational Objectives, and categories of purposes were considered from literal knowledge, to interpretation, evaluation, extrapolation and appreciation of the text. Purposes serve as advanced organisers in helping readers to identify the most relevant parts of the text. The articulation of purpose, predisposes the reader to organise a strategy of reading behaviour which facilitates comprehension in terms of that purpose. Our earlier research findings showed that the kind of strategy effective for the subsequent retrieval of detailed specific information, and for the selection of the main theme, was very different (1). The danger of over-specification of purpose was also of much concern and during the project it became increasingly clear that a reader's purpose could never be purified to match exactly on to one category of the taxonomy. In his articulation of purpose and evaluation of outcome, the reader learns to judge the plurality, or mix, of hierarchically organised purposes, which together make up an overall reading purpose. The Taxonomy of Purposes is presented in Paper 2.

2.3. The Four Tools

The Reading Recorder, the Flow Diagram Technique, the Kelly Repertory Grid, and the Taxonomy of Purposes, can each be used as a consciousness raising device for alerting the reader to aspects of experience and behaviour, which are difficult to explore without the aid of these tools. As the project progressed, tools were modified, refined and put to varying uses. Other tools were developed. This is summed up in Paper 5.

3. APPROACHES TO TEACHING

How the model and tools could be used in courses on "Learning to Read-for-Learning" raised questions of the philosophy of instruction, learning and teaching.

3.1. Assumptions about Instruction

17

Skinner, DeCeccio, Gagné, Ausubel, Piaget, Bruner, Rogers and Maslow, have all developed theories, that relate to learning and teaching. These vary from each other in many different ways. One major dimension along which they can all be placed is the extent to which the instructor retains decisions about

content, timing, feedback and sequence to himself, or offers the learner an independent opportunity to make such decisions. A second dimension is concerned with instructional material. Some of these theorists see the content and structure of one coherent set of materials as crucially important to "correct" learning; others assume an infinitely divergent system of fragmented and contradictory materials and natural resources to which the learner has open access. A third dimension is that of consequences; feedback, reinforcement, knowledge of results, and exposure to the consequences of one's thinking, feeling and acting, all relate to the reactive component in learning. These theorists vary in their interpretations of the part such reactivity plays. Some assume a direct behavioural-ecusal connection whilst others believe that it is only the creation of relevant understanding that produces results. Finally a fourth dimension is concerned with levels of organisation and their implications for sequencing, timing and structure in learning. Together these four dimensions of the considerations built into learning/teaching situations go some way towards clarifying our use of the term self-organisation.

3.2. Self-Organisation in Learning

Self-organisation is concerned with the ability to teach oneself by creating and exercising choice. Self-organisation in Reading-for-Learning is achieved when the reader can fully understand and articulate his own needs and the demands being made of him. If he chooses to learn, he is in control of his existing knowledge and skills, he can define his purpose from a wide ranging repertoire of purposes, and recruit a strategy for accessing reading materials effectively. This includes materials that will challenge, contradict and annoy him as well as those most likely to feed directly into his existing positions. His ability to create alternatives among the materials he makes available to himself is matched by his ability to determine his interactions with it. A self-organised reader is able to deploy a wide range of reading strategies and tactics flexibly to meet an equally wide range of needs and purposes. But he recognises that his assumptions about any text may be wrong and he remains free to re-define his purposes and processes as these take him into more effective interaction with each resource. He is aware of the personal learning outcomes of his reading and can assess them in the light of his developing purposes. He freely seeks, selects, accepts or rejects sources of feedback information, that allow him to interpret the success of his reading activities. He is also flexibly aware of this whole process and is therefore continually developing as a reader. He is able to move freely up and down the levels of awareness as he reads, choosing the appropriate levels at which to consciously tackle his difficulties in understanding. He is able to relax into non-conscious use of his skills without losing the ability to bring them back into conscious review. Finally, the self-organised reader is sufficiently self-aware to know when to seek outside assistance in coping with his Reading-for-Learning problems.

3.3. Three Methods of Teaching

Some fifteen to twenty courses involving approximately 500 students have been organised. For the purpose of this report three courses which shall be assigned the generic terms, Loughborough (L), Gypsy Hill (G.H.) & Brooklands (B) are scrutinised since these typify three very different teaching styles, which were originally used in these locations. Loughborough and Gypsy Hill are Colleges of Education, and Brooklands is a Technical College.

The Loughborough Course consisted of a series of Reading-for-Learning Modules. Each module offers the reader a conceptual framework within which to explore his reading skill; his strategies and tactics in reading and how these relate to Purpose, Text organisation and Reading Outcomes. The reader is offered feedback of his performance and encouraged to review and change in particular ways. Choice is offered within a framework of predetermined alternatives. The hierarchical organisation of the Modules was based on the Purpose Taxonomy. The researcher worked individually with the students and the course was organised so that each student progressed systematically from the

simplest to the most complex Module. Instruction in the use of the tools and the conceptual framework of the Reading-to-Learn Model were explicitly built into the Modules. Before and after the Course, measures on a series of Reading-for-Learning Tests were taken. A Pre- and Post-Course Questionnaire was administered and a longer term comparison of Academic Performance was made.

The Gypsy Hill Course was run on a group basis. Each group consisted of 12 students. In the course the research team worked together to give specific instruction in the use of the tools; the Reading Recorder, the Flow Diagram, the Kelly Grid and the Taxonomy of Purpose. Having checked that the students could use the tools more or less adequately in the ways described, the students were given freedom to explore their own reading skills. The Gypsy Hill equivalent to the Loughborough Modules consisted of a more loosely structured package. The package offered a repertoire of purposes, reading materials, and assessment procedures, but in contrast with Loughborough more choice was built into the package. Students were free to select their own purpose, text and assessment, proceeding in any order. Individual supervision was minimal and because of the relaxation of structure, there was less opportunity for the provision by the researchers of 'Knowledge of results', as feedback during reading. From the beginning the onus was on the reader to create his own feedback and to assess his own performance. Students were free to order the exercises in individual ways and were also free to use the tools to provide their own feedback, and to create awareness. The researchers' efforts went into encouraging students to review their performance consistently and to use this review to refine the reading process. The researchers involved in this study became very aware of the interactive processes between themselves and the learners but they preserved the illusion both for themselves and the learners of a systematic 'before and after' investigation. This involved the same Reading-for-Learning Questionnaire and Academic Performance measures as were used at Loughborough. A systematic review of the researchers' learning experience in this study led to Brooklands.

At Brooklands, the initial emphasis was on helping the learners explore individually their attitudes towards and assumptions about learning. For this, each student was offered opportunities to use the Kelly Grid. Familiarisation with the Model and Tools of Reading-for-Learning was followed by more exploration of life/learning purposes, using the Grid. The study became a series of case histories in which no useful comparative 'before and after' data was obtained. Each of the researchers involved found it to be a significant learning experience for them. In offering freedom-to-learn within the training situation, who learns what from whom? It led to a reformulation of the teaching/learning process and evoked the Learning Conversation model which is reported in Paper 5.

3.4. Structure and Freedom

Thus, looking across the three types of Course, it can be seen that the teaching method in the Loughborough Course was fairly tightly structured and the decision making was left largely with the researcher. In the Gypsy Hill situation, the method was more loosely structured and the students had much greater degree of freedom to make their own path through the structure and, in fact, to ignore certain aspects of the material altogether. In Brooklands, although a rich resource was available; books, the Training Modules, the Purpose Taxonomy, the Reading Recorder, the Flow Diagram Technique, the Repertory Grid and the researchers themselves, the students were left to create their own structure. The researchers were prepared to go along with the needs of the students. Thus, between the three training courses, we can see that the students were offered a mix of freedom and structure. In Loughborough the freedom was restricted to minute-by-minute choices, and both the structure of the material and the teaching approach insisted that any larger choice remained with the researcher and with the material. Although, as this course developed, the students demanded and were offered, a greater degree of choice in the more complex Training Modules. In the Gypsy Hill situation a fair amount of guidance was offered in the use of the tools but this guidance had to be demanded rather than offered and insisted on. In the Brooklands situation, the students were offered an opportunity to familiarise themselves with the tools, but the teaching effort went into personal support and into helping students identify the major

choices at the peak of their 'purpose for learning hierarchy', leaving them entirely to their own devices in terms of how they created the alternatives and to decide in which direction to proceed.

4. RESEARCH STRATEGY AND PROBLEMS OF MEASUREMENT

The formulation of the two issues in the Introduction of this paper, creates a dilemma. If the research takes the traditional experimental-control-group form, then the attempt to help people become more self-organised in their Reading-for-Learning, is incompatible with a statistically reliable objective evaluation of the methods that are used. Any results so obtained would be illusory. The process by which self-organisation is encouraged is individually diagnostic. The greater the degree of self-organisation that is achieved, the more various are the purposes that are successfully pursued. This mediates against a systematic 'before and after' measurement of matched groups.

In its progress from Loughborough to Gypsy Hill to Brooklands, a significant feature of the whole project has been a progressive movement away from orthodox experimental designs towards a paradigm of research which removes the dilemma.

4.1. Problems of Measurement

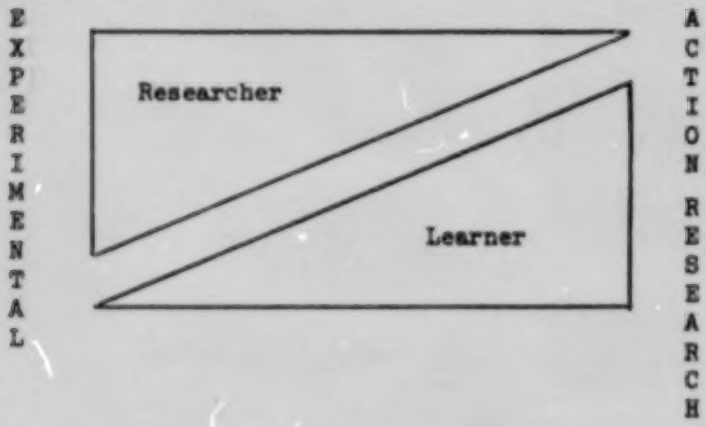
The pursuit of objectivity, normally involves the researcher in a detailed control of many aspects of his experimental situation. Reliability, accuracy and validity all require that the researcher progressively differentiates his situations and carefully designs them to yield the type of data he requires. Specification of conditions, selection of measures and repeatability of events are almost exactly those dimensions along which the learner is being encouraged to move in his acquisition of greater self-organisation. As the learner begins to exercise greater and more sensitive choice so the researcher loses his ability to insist on his carefully prepared design. If the researcher insists on carrying through such plans, he produces highly structured short term events which trivialise the experiences of the learner.

If the researcher tries to remain aloof from the teaching events he loses contact with the learner. This reduces the reality and relevance of the research findings. On the other hand, a free-wheeling involvement of the researcher in the idiosyncratically chosen experiences of each learner as he moves towards greater self-organisation does not lend itself to the collection of systematically comparable performance data.

The first move away from the strict experimental paradigm is to involve the subject in the purpose of the research. Each subject is provided with feedback about his improving performance at each phase of the teaching/learning programme. But the information offered to the student about his performance also serves as research evidence. There is much to be said for this approach, but it suffers from the "Pollsters dilemma". The feedback becomes part of the process and is therefore polluted by all the assumptions that both the researcher and the learner are making about the ongoing situation. This aspect of the "experimenter effect" is now fairly widely accepted (7).

The researcher can move towards greater involvement in the teaching/learning events. He recognises the experimenter effect, accepts it and uses it. Being aware that he is having an effect, he consciously observes what it is. This action research paradigm has one major advantage. Because the researcher enters into the role of active helper and adviser to the learner he becomes involved in the real problems that the learner is having. He trades his loss of objectivity for the access to a rich mine of experience. The action researcher is continually confronted with unexpected situations each of which demand new measuring methods. Because of his close co-operation with the learner many of these measures relate to assessing the learner's success in achieving the learner's purpose. But the researcher has purposes of his own and needs to develop additional measures to evaluate the situation in his own terms.

The action research paradigm takes on a new dimension when the subject is being encouraged to become more self-organised in his learning. The learner is in many ways becoming his own researcher. His self-assessment procedures take over many of the measuring operations. By deciding purposes, recording reading behaviour, assessing outcomes and deciding on his overall strategy for researching his own processes, the learner takes over much of what the experimentalist calls research.



The Research Continuum

4.2. The Research Strategy

The methods of research outlined in the previous section can be seen as lying on a continuum. One extreme is the traditional 'before and after' experiment, the opposite end is the researcher monitoring the learners' researching of their own processes. The job of research can be seen as existing right across this continuum, what varies is who sets up the criteria and who chooses the materials, takes the measurements and interprets the results. Another way of looking at it is to talk of a research contract. At one end of the continuum the researcher contracts to take all responsibility and treats the learner as an 'object' to be manipulated. As we move along the continuum the contract is shared in various ways, the learner takes more and more responsibility until the researcher occupies only an advisory role. Loughborough, Gypsy Hill and Brooklands can be seen as occupying different positions along the continuum. This is illustrated in Figure 3.

Even the Loughborough study is already quite removed from the pure 'before and after' design. Brooklands represents a position near the other extreme. As the learner takes over more of the research process, the within course measures become more individual, losing their coherence as research results. The Pre-course and Post-course tests of Reading-for-Learning competence and the Questionnaire remain as 'before and after' measures of the whole course. In Loughborough these showed a well organised movement along the dimensions that the researcher thought to be important. In the Gypsy Hill study, the within course experiences were more varied and the results on the researcher measures were more dispersed. At Brooklands, the opportunity to review their commitments (or lack of it) to academic learning allowed the learners to identify personal learning purposes which were unrelated or opposed to those of the researchers' follow-up measures. The researchers' criteria therefore, showed no coherent movement in one direction. These results were confirmed by a longer-term follow-up of academic performance. Indeed, some of the Brooklands

students were so successful in their own terms that they left Brooklands to follow other pursuits. This showed as "drop-out" on the researcher returns.

Even as the researcher moves into the advisory role, he begins to formulate ideas about the supervision of the learner's self-organised researching of his own processes. He, the researcher, begins to research his own process. This was the starting point of this project and of the development of the paradigm of 'Learning Conversations' and 'Conversational Research' which were elaborated during the project and are reviewed in Paper 5.

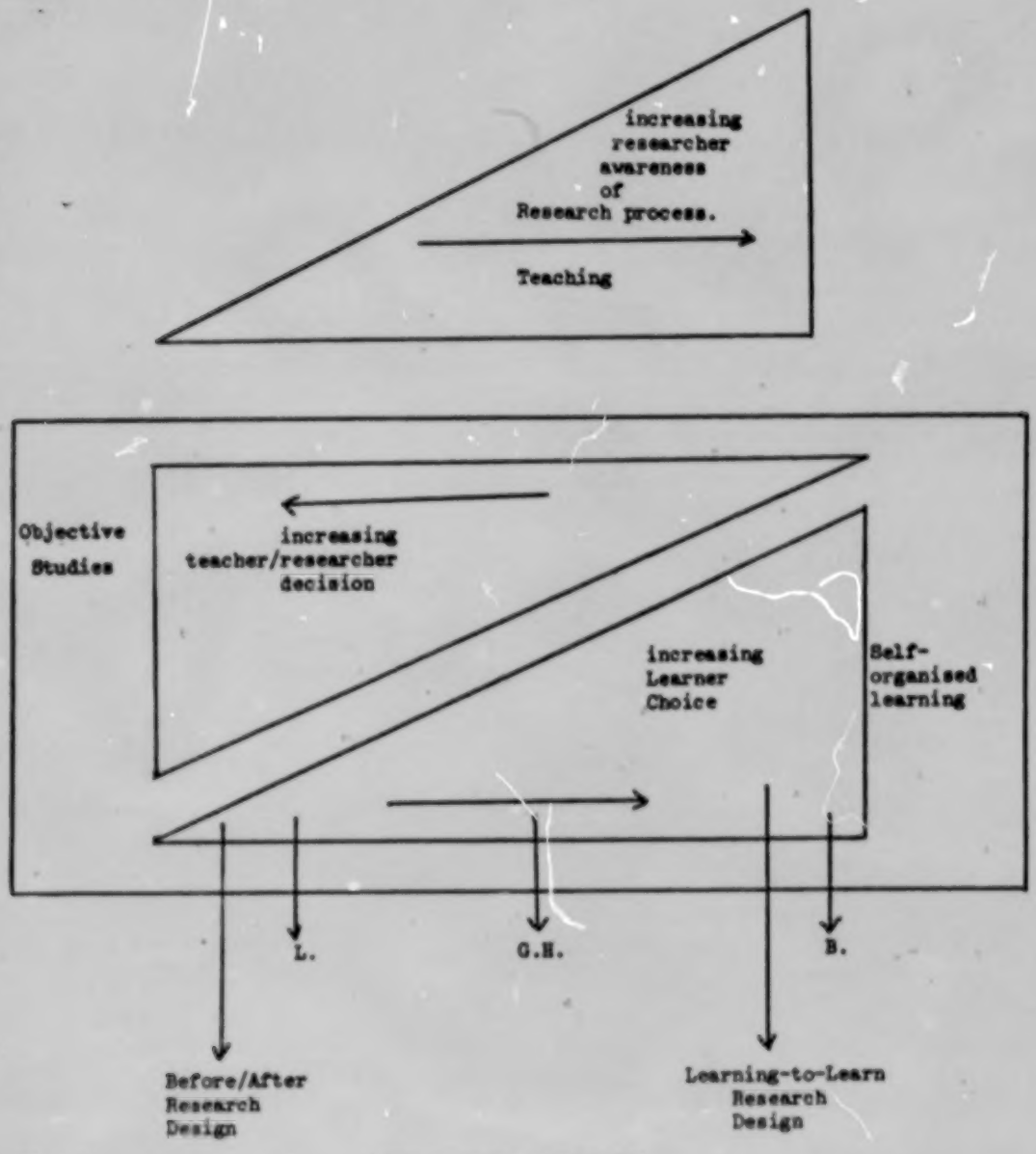


Fig. 3 THE RESEARCH CONTINUUM

REFERENCES : PAPER I

1. Augstein, E. S. Harri-. (1971) 'Reading Strategies and Learning Outcomes'. PhD Thesis. Brunel University.

2. Bruner, J. (1964) 'The Course of Cognitive Growth'. Amer. Psychol. 19, No.1.

3. Thomas, L. F. & Parnes, E. (1972) 'The Handbook of the Reading Recorder'. Centre for the Study of Human Learning, Brunel University.

4. Thomas, L. F. (1972) 'The Flow Diagram Technique'. Technical Report No.37. Centre for the Study of Human Learning, Brunel University.

5. Thomas, L. F. (1972) A video tape: The Flow Diagram Technique. Centre for the Study of Human Learning, Brunel Un.

6. Thomas, L. F. (1975) 'Towards Achieving Personal Meaning: A Personal Construct Approach to Learning and Therapy'. Centre for the Study of Human Learning, Brunel University. In Preparation.

7. Rosenthal (1963) 'On the Social Psychology of the Psychology Experiment'. Amer. Psychol. 51, 268-283.

PROJECT SPONSORED
BY S.S.R.C.

CENTRE FOR THE STUDY OF HUMAN LEARNING

THE SELF-ORGANISED LEARNER
AND
THE PRINTED WORD

PAPER 2 - THE LEARNING CONVERSATION:
A STRUCTURED APPROACH

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex.

Laurie F. Thomas
E. Sheila Harri-Augstein

1. INTRODUCTION 1

1.1. The Purpose of the Investigation 1
1.2. Students' Reading-for-Learning Problems 1
1.3. Action Research and Evaluation Procedures 2
1.4. Two Experimental Conditions 2

2. THE RESEARCH STRATEGY 3

2.1. Self-Organised Learning and the Requirements of Research 3
2.2. The Experimental Design and Procedure 3
2.2.1. The Subjects 3
2.2.2. The Reading-for-Learning Materials 5
2.2.3. The Tools and Techniques 5

3. THE TRAINING PROGRAMME AND MEASUREMENT FOR FEEDBACK 6

3.1. Awareness and Experiment 6
3.2. The Training Modules 6
3.3. The Supportive and Guiding Role of the Researcher 8

4. EVALUATION PROCEDURES 10

4.1. Long-term, Short-term and Immediate Measures of the Effectiveness of the Training Programme 10
4.2. Long-term Measures : Follow-up 10
4.2.1. Academic Grades 10
4.2.2. Subjective Reports 10
4.3. Short-term Measures : Before and After Training 11
4.3.1. The Pre- and Post-Training Tests 11
4.3.2. The Questionnaire 11
4.4. Immediate Measures : In Training 11
4.4.1. The Training Modules 11

5. RESULTS: STUDY ONE 12

5.1. Academic Change 12
5.2. Subjective Comments 12
5.3. Changes in the Questionnaire 15
5.4. Pre- and Post-Test Measures 16
5.5. Changes of Performance achieved within the Modules 23

6. RESULTS: STUDY TWO 26

6.1. The Problem of Results 26
6.2. The Case Study in the Context of the Group: Time Spent in Training 26
6.3. The Case Study (SG): Measurement and Feedback Within the Modules 27
6.4. The Case Study in Context of the Group: Changes in Academic Perf. 32
6.5. The Case Study: Personal Comments 34

7. TOWARDS A THEORY OF LEARNING CONVERSATION: A REVIEW OF THE RESEARCHER'S LEARNING EXPERIENCE 35

7.1. Introduction 37
7.2. The Learning Conversation: Commentary on Process 38
7.2.1. Structure and Freedom 38
7.2.2. The Challenge of the Stereotype 38
7.2.3. Managing the Process Dialogue 38
7.2.4. Components of the Process Dialogue 39
7.3. The Learning Conversation: Support during Reflection 40
7.3.1. The Uncertainty of Process 40
7.3.2. Breakthrough to Mutual Trust 40
7.3.3. Buffering Reflection 41
7.3.4. Examples of Supportive Transactions 41
7.3.5. Managing the Support Dialogue 42
7.4. The Learning Conversation: Referents for Reviewing Competence .. 43
7.5. Some Failures 43
7.6. A Comment on Structure and Freedom 44
7.7. Implications 44

8. DISCUSSION 45

9. IMPLICATIONS 48

APPENDICES 1. A Classification of Student Reading Problems
2. The Modules
3. The Questionnaire
4. The Purpose Taxonomy

APPENDICES

THE LEARNING CONVERSATION:
A STRUCTURED APPROACH

1. INTRODUCTION

1.1. The Purpose of the Investigation

The main purpose of the Loughborough Study was to evaluate the effectiveness of a Training Programme designed to encourage students to explore, review and improve their Reading-for-Learning competence. The expectation was that as a result of the learning experience offered to them students would:-

(i) become more aware of the components of the Reading-for-Learning Process;

(ii) review and improve the range and effectiveness of their Reading-for-Learning skills;

(iii) use this experience to review and improve their skills in other learning areas such as listening in informal and formal situations, writing for personal notes, essays and examinations, and discussion in tutorials and seminars;

(iv) maximise their total learning performance and improve their capacity for self-organised learning.

During the on-going action-research, it was also expected that evidence would become available for the refinement and modification of:-

(i) the experimental design;

(ii) the 'context sensitive' psycho-social learner/researcher interaction;

(iii) the awareness-raising tools, techniques and procedures;

(iv) the model of the Reading-for-Learning Process, which formed the underpinnings of the Training Programme.

1.2. Students' Reading-for-Learning Problems

Individually conducted interviews, and informal group discussions, indicated that students experience a wide variety of reading problems. Except for such obvious and fragmented descriptions, as:- "I can't concentrate for long", "I get bored easily", "I can't remember what I read" and "I get different meanings on repeated readings", students appear to be unable to identify precisely and explicitly the nature of their reading problems. They are largely unaware of the strategies and tactics which underlie and condition their reading behaviour, and of the mechanisms by which, if at all, they evaluate the effectiveness of their reading. To raise awareness of these problems, by interview and questionnaire, became the first step in the research programme. The findings of these early investigations are reported in Appendix 1. A Taxonomy of 'Student Reading-for-Learning Problems' was constructed from the data.

This initial review of student reading problems, together with earlier research findings (1) provided clear substantive evidence that students operate well below their potential, in their use of reading as a learning skill. This supports one basic assumption of the study, that the process of Reading-for-Learning represents a major learning skill and that there is a very real need to develop an effective pedagogical approach for encouraging competency in it. Very little empirical investigation has been conducted in this crucial area of learning experience. Furthermore, in the curricula of secondary and higher education little reference is made to the development of reading competency. There is within our educational institutions a very real void

between the teaching of reading and the teaching of the use of reading as an effective learning skill.

1.3. Action Research and Evaluation Procedures

The study was divided into two major areas of investigation, although these were seen as intrinsically linked.

(i) Action Research involved the application of the Training Programme, which was formulated as a result of earlier research findings (1). Pure research, development and application are seen as inextricably related, so that the results of this action research are assumed to feed back and influence the interpretation of earlier research findings, serving to develop a deeper understanding of the theoretical model and a sharpening of the techniques and procedures used. Action research made use of the immediate results of the training exercises as feedback which the subjects could use to heighten their awareness and to review the quality of their performance. This feedback component of the exercises and other short- and long-term assessments of performance became the measures which were used to evaluate the effectiveness of the Training Programme.

(ii) Evaluation Procedures involved the development and identification of effective measures, as indicators of the validity and reliability of the Training Programme. The evaluation of the programme was a continuous process taking place parallel with the training. These measures are grouped into three categories:

(a) Long-Term Measures, such as changes in Academic Performance and Subjective Reports, revealed by follow-up studies.

(b) Short-Term Measures, such as changes in responses to Pre- and Post-training Questionnaires and Pre- and Post-training Tests, just before and after training.

(c) Immediate Within-Training Measures, which depend on changes in reading behaviour, (Strategies and Tactics) and how these are related to the effectiveness of Reading Outcomes. The rationale behind these evaluation procedures is made explicit in Sub-Section 4.1.

1.4. Two Experimental Conditions

The action research was carried out under two different sets of experimental conditions. One major difference was the degree of freedom offered in the Training Programme.

(i) In Study One, nine 1st year students in sub-groups of three were given training which lasted over two college terms. They undertook one session per week on the Training Modules (Section 3.2). Each session lasted about 1½ hours. This amounted to a total of about 35 hours per student.

(ii) In Study Two, nine 1st year students were given individual training over a period of four terms (spanning two college years). They worked through the Training Modules less regularly than the students in Study One, but spending on average about one hour, per session, per week. Added to this was time spent in informal discussion with the experimenter. These discussions became accepted as crucial components of the learning experiences. The psycho-social interactions taking place in the context of these discussions, became a focal point of analysis and interpretation. This aspect is dealt with in Section 7. Thus, students in Study Two were offered wider varieties of experience and greater freedom than those in Study One. The total amount of time spent on the training varied greatly from

student to student (Table 8, Section 6.2.). These differences in experimental conditions led to problems of comparison and measurement. This important issue is highlighted in the Result Section and discussed in the Implications Section.

2. THE RESEARCH STRATEGY

2.1. Self-Organised Learning and the Requirements of Research

An emphasis on self-organisation in learning presented a major problem of research design. Encouraging freedom of choice during training inevitably reduces control of the variables. The exercise of choice by the subjects disperses the neat grouping of results, thus increasing the apparent subjectivity of the process. In later studies (Paper 3, Paper 4) of this series, subjects were offered increasing freedom of choice. In this study the problem was minimised by restraining the choice offered to subjects. Each subject was asked to proceed through a prepackaged set of Training Modules, each subject tackling the Modules in the same order. However, within each Module, subjects were free to explore, review, and change their skill in individual ways. This was achieved by allowing each student a structured pattern of choice within which to pursue his own reading competence. Thus, the pathway through each Module varied from student to student. This depended upon the student's own diagnosis of performance within the Module. The conditions which formed the basis for this assessment were built into the Modules and were therefore controlled by the researcher. Briefly, these consisted of the achievement of a minimum absolute criterion of performance in the tests, and of a specified optimal relationship between the reading purpose, the reading strategy and the reading outcome measured by the tests.

2.2. The Experimental Design and Procedure

The experimental group attempted an initial "Reading-for-Learning" test (the Pre-test) on the Reading Recorder, and then worked through the Training Modules. They were subsequently retested (the Post-test) on the Reading Recorder. A control group attempted this Post-test. As another short-term measure of the effectiveness of the training, a Questionnaire designed to explore habits and attitudes towards "Reading-for-Learning" was administered at the beginning and end of the Training Programme. As one long-term measure of the effectiveness of the training, the experimental subjects were asked to write their own subjective reports of the effect of the training. Records of academic performance in two principal "verbal" subjects, before and sometime after, the Training Programme were collected for the experimental group in order to examine the wider and longer term effects of training. These were also collected for the control group (the whole seminar group). The experimental design is summarised in Table 1.

2.2.1. The Subjects : College of Education Students

Study One

Twelve experimental group subjects between 18 and 19 years of age were initially recruited as volunteers. Three of these dropped out during the course. The subjects were recruited from the 1st year group and were members of the same seminar group, in their main subjects. This meant that they had the same tutors in their main academic subjects. They volunteered because they felt uneasy about their reading competence, and they suspected that their lack of competence heavily restricted their academic progress. Each volunteer selected his (or her) own control subject, from within the same seminar group, for comparison in the Post-Test. The following criteria were given as a guide for this selection:-

(i) similar grade in main academic subjects in the first set assignment of the year;

(ii) similar grades in the Advanced Level GCE;

(iii) similar level of general academic ability, based on seminar performance;

Phase	SUBJECTS		Description
	Experimental	Control	
I	9	Education 35 PE Theory 22	A Pre-Measure A long term measure of training effectiveness. Academic Grades in Principal Subjects Education and PE Theory, collected, averaged and recorded
II	9	-	A Pre-Measure A short term measure of training effectiveness. A Questionnaire designed to explore skills and attitudes towards reading.
III	9	-	A Pre-test A short term measure of training effectiveness. Pre-Test A Text A Test A
IV	9		THE TRAINING PROGRAMME consisting of the Reading-for-Learning Modules (Appendix 2)
V	9	9	A Post-Test A short term measure of training effectiveness. This was matched with the Pre-test. Post-Test B Text B Test B
VI	9	-	A Post-Measure A short-term measure of training effectiveness. The same Questionnaire as in Phase II.
VII	9	Education 30 PE Theory 21	A Post-Measure A long term measure of training effectiveness. Academic grades in the same two principal subjects collected, averaged and RECORDED. Subjects wrote their own subjective reports. Staff comments recorded.

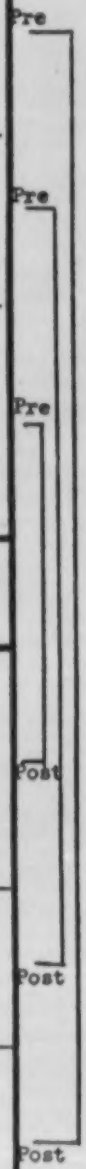


Table 1 THE EXPERIMENTAL DESIGN

(iv) similar range of reading interests;

(v) similar chronological age to within six months, and same sex.

Study Two

Twelve experimental group subjects between 18 and 19 years of age were recruited as volunteers. Three of these dropped out during the course. The subjects were recruited from the first year but the combination of their main academic subjects differed from those volunteers in Study One, and from each other. Individual volunteers seldom met inside or outside their studies. They only rarely participated as a group in the training programme. They never participated within one seminar group. There were no control subjects.

2.2.2. The Reading for Learning Materials

Text A and B for the Pre- and Post-Test

These texts were matched as closely as possible for length, number of paragraphs, conceptual complexity, and content.* The texts consisted of approximately 3,000 words divided into 9 - 12 paragraphs and written by one author. They were abbreviated versions of two separate chapters of Charles Darwin's "The Origin of Species" (2). These texts were typed onto continuous stationery for use on the Reading Recorder.

The Training Programme Texts

These were selected from "The Essentials of Learning", a psychology text written for College of Education students (3). The battery of texts within each Module were matched for length, number of paragraphs, conceptual complexity and content. These texts were typed onto continuous stationery for use on the Reading Recorder.

2.2.3. The Tools and Techniques

The action research being described depended on the application of new techniques which were developed in earlier reported research work (4).

(i) The Reading Recorder

This records reading behaviour and shows the reader exactly how his reading time is distributed within the text and where he (or she) hesitates, makes notes, or searches backwards and forwards in the text. This record gives a protocol of reading behaviour and this can be related to the purpose and the outcome of reading. Thus, it provides information concerning the reader's strategy. The read record is therefore an observable objective measure of the process of Reading-for-Learning.

(ii) The Flow Diagram Technique

This technique displays the multi-dimensional relationships inherent in the text and describes the subjective meaning structure of this. It was used in a number of ways:-

(a) by the researcher, for matching the texts in the Pre- and Post-Tests and in the Modules, and as a basis for the assessment of reading outcomes, in the Pre- and Post-Tests;

(b) by the students to clarify purposes for reading, to describe the conceptual complexity of the texts presented in the Modules, and to assess their own reading outcomes within the Modules.

Footnote:* The conceptual complexity of the texts was assessed by means of the Flow Diagram Technique (2.2.3).

(iii) The Purpose Taxonomy

In order to sharpen the reader's awareness of purpose, and to help him or her to evaluate the outcome of reading, a Purpose Taxonomy was developed. This was a modification of Bloom's Taxonomy of Educational Objectives (5) and categories of purposes were considered from literal knowledge, to interpretation, evaluation, extrapolation and appreciation of the text. The Taxonomy is presented in Appendix 4.

The ten Modules which together represent the Training Programme, were each designed to encourage the learner to explore one specific reading purpose, from the Taxonomy. The Modules, with the range of specific purposes for reading, are presented in Appendix 2. The hierarchical sequence of the Modules (1 - 10) was based on a hierarchical sequence of purposes and strategies. Earlier research findings showed that the more elaborate the purpose of reading, then the more elaborate was the strategy required to achieve a satisfactory outcome (1). The more advanced Modules within the hierarchy, were designed to encourage the reader to appreciate the plurality of hierarchically organised purposes, which typically represents a 'natural' reading purpose.

3. THE TRAINING PROGRAMME AND MEASUREMENT FOR FEEDBACK

3.1. Awareness and Experiment

In the Training Programme, students were encouraged to become more aware of the reading conditions which underlie and structure their reading behaviour and to bring these under intensive review. This "consciousness raising" activity depended on self-exploration of a series of Reading-for-Learning Modules. The investigatory model of the Reading-for-Learning process (Paper 1) and the tools for exploring this (the Flow Diagram Technique, Purpose Taxonomy and Reading Recorder), were explicitly built into the Modules. As a result, it was expected that students would question existing habits and invent new ways (for them) of reading effectively. This emphasis on awareness and experiment was intended to encourage students to become more flexible and autonomous in their use of reading as a learning skill.

3.2. The Training Modules

The optimum approach to reading was seen as a flexible self-organisation of a series of sub-skills, training for which was embodied in the hierarchical series of Modules. It was expected that the total sequence of Modules would enable the subjects to change their skills in reading and that these in turn would produce a beneficial influence on their academic performance. Each Module offers the reader a conceptual framework within which to explore his reading skill; specifically to relate Purpose, Strategy, Outcome and Review, within one coherent model of the process. The reader is offered feedback of his performance by the researcher and encouraged to review and change in particular ways. Choice is offered within a framework of predetermined alternatives. There are six possible routes through each Module.

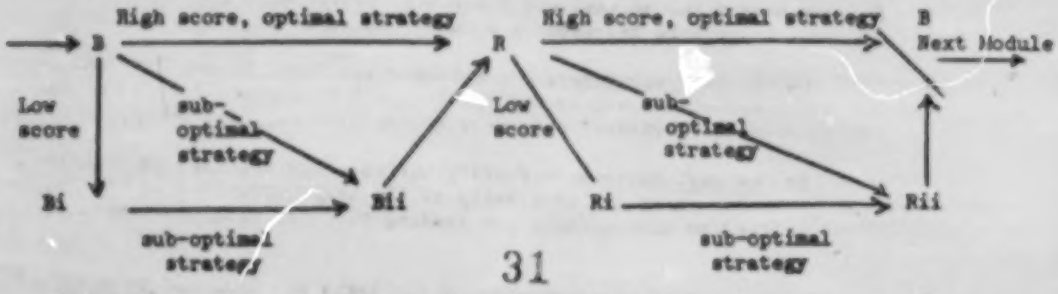


Fig.1 Alternate Routes through any Module

The hierarchical organisation of the Modules is based on the Purpose Taxonomy (Appendix 4).

The hierarchy of Modules from 1 - 10 offers an increasing opportunity for self-organisation. The learner is offered experiences which heighten his insights into his own processes. He uses this to create a personally meaningful structure of purposes and skills, which continually feed back into his total reading-for-learning performance.

Modules 1 and 2

To perceive words, phrases and sentences as units of meaning.

Module 1: Purpose - To recognise units of meaning.

Skill To attribute literal meaning to units in a text and subsequently recognise these units.

Evaluation Multiple Choice Tests.

Module 2: Purpose - To recall units of meaning.

Skill To use the skills of Module 1 for recall of these units in literal and paraphrased form.

Evaluation Free Response Objective Tests.

Modules 3, 4, 5 & 6

To perceive different levels of meaning in a text and to explore its structure.

Module 3: Purpose - To identify specific facts.

Skill To use the skills of Module 1 for selecting and identifying specific facts.

Evaluation Recognition Objective Test.

Module 4: Purpose - To select and recall specific facts.

Skill To use the skills of M.1, M.2 and M.3 for literal recall of specific facts.

Evaluation Self-initiated test with peer learner evaluation.

Module 5: Purpose - To identify main ideas.

Skill To use the skills of M.1 for selecting and identifying main ideas.

Evaluation Self-initiated flow diagram with peer learner and tutor evaluation.

Module 6: Purpose - To select and recall main ideas.

Skill To use the skill of M.1, M.2 for literal and paraphrased recall of main ideas, within a coherent summary.

Evaluation - Self-initiated flow diagram as referent for evaluation.

- master flow diagram as referent for evaluation.

Modules 7, 8 and 9

To perceive the complex pattern of meanings within sections, chapters and a book, and to use this for appreciation, synthesis, evaluation and extrapolation.

Module 7: Purpose - To appreciate patterns of meaning in a text.

Skill - To use the skills of M.1 - M.6 for attributing a complex higher order 'Structure of Meaning' to a text.

Evaluation - Construction of a Personal Meaning Net, which is subsequently evaluated with peers and/or tutor.

Module 8: Purpose - To integrate 'Structures of Meaning' from a number of texts into one coherent synthesis.

Skill - To use the skills of M.7 for relating and re-organising personal meaning into a new structure.

Evaluation - Construction of a Personal Meaning Net which is subsequently evaluated with peers and/or tutor and transformed into an essay.

Module 9: Purpose - To evaluate the patterns of meaning in a text and to extrapolate by bringing other experiences and contexts to bear.

Skill - To use the skills of M.7 for critical appraisal, and to use personal knowledge and experience to invent new ideas.

Evaluation - Construction of Personal Meaning Nets which are subsequently mapped on to self-initiated flow diagrams of texts, and evaluation with peers and tutor.

Module 10

The self-organised use of reading

- The formulation of personally meaningful purposes and problems.
- The selection of relevant printed resources.
- The implementation of optimal strategies.
- The personal, interpersonal and public review of outcomes.
- Self-organised review of the learning process.

Fig.2 shows how training on the modules leads to increasing self-organisation in multi-purposive (heterarchical) Reading-for-Learning. Each student progressed systematically from the simplest to the most complex Module. The detailed Design, Content and Structure of the Modules is presented in Appendix 2.

3.3. The Supportive and Guiding Role of the Researcher

An encouragement of self-organisation within the Modules focused attention on the role of the researcher. Informal discussions during the training sessions indicated that despite the autonomy built into the Training Modules, learners welcomed an opportunity to discuss their progress with the researcher. They needed to be observed while experimenting, and they needed to compare their progress with others in the group. Some students depended on praise, or even rebuke and welcomed an opportunity to discuss with the researcher their doubts and anxieties during the stressful change process. Subjects had to be helped to make use of their diagnosis of performance, i.e. they had to be encouraged to select their own feedback, both within the Modules and from one

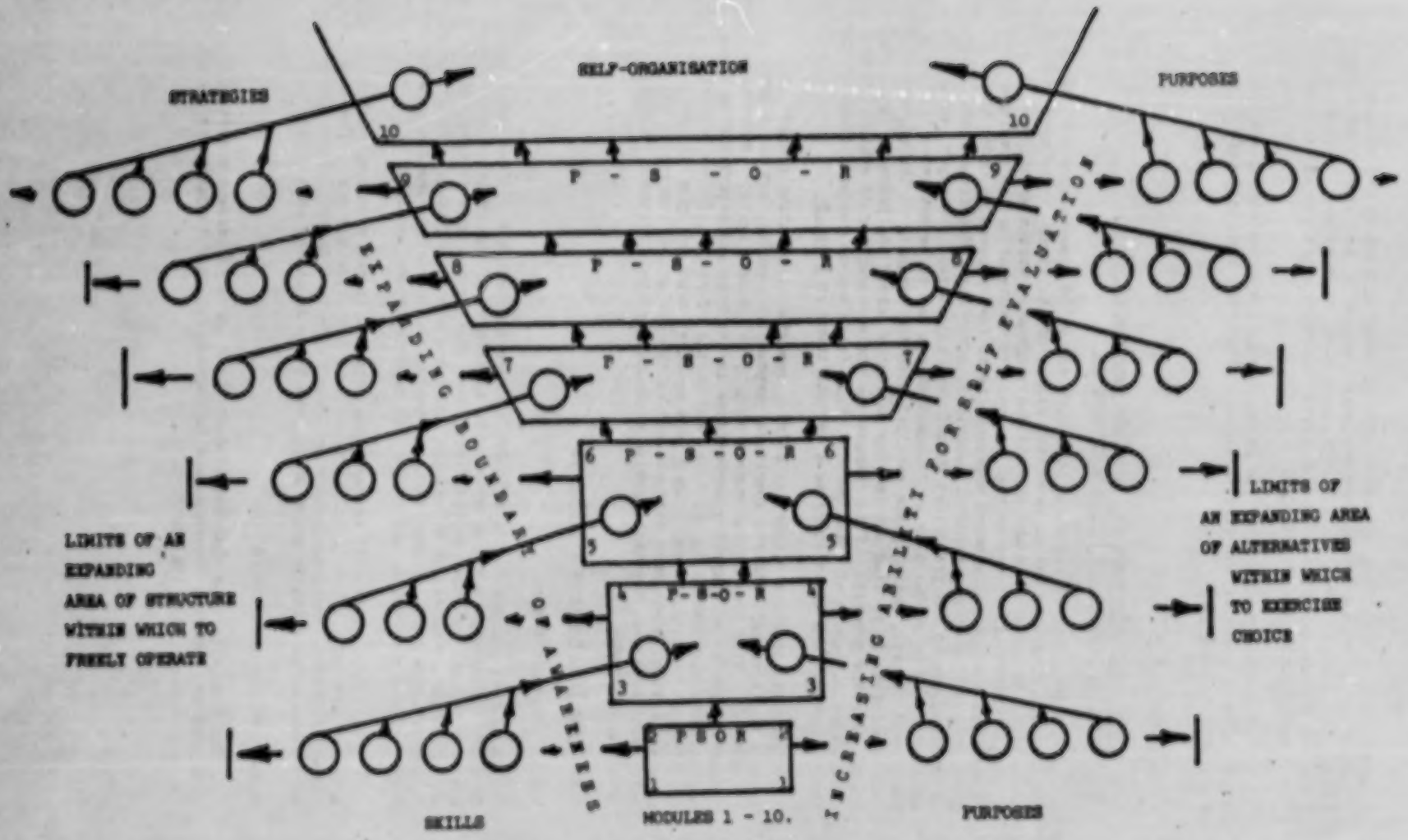


Fig. 2.

HIERARCHICAL GROWTH OF READING-FOR-LEARNING

Module to the next. They were also offered opportunities by the researcher to use the shorter and longer term evaluation measures, as feedback of their own and others' performance. Thus the continuum of immediate, shorter and longer term evaluation measures also served to raise awareness and provide feedback and knowledge of results.

These various functions of the researcher in the experimental set up, became a focal point of the investigation. This very important aspect is dealt with in Section 7.

4. EVALUATION PROCEDURES

4.1. Long-term, Short-term and Immediate Measures of the Effectiveness of the Training Programmes.

The negotiation of reliable, objective and valid measures for evaluating the Training Programme was an important aspect of the study. The type of evaluation that is used in any educational programme, varies greatly with the theoretical framework that is used, in constructing the programme. An orthodox statistically based approach, tests the learners in order to quantify how close their terminal behaviour, after the "educational conditioning" or training, is to the prescribed behavioural objectives. A psycho-social approach, with an emphasis on self-organisation, has to be evaluated through a continuous process, taking place parallel with the training. The objective of this evaluation is to find out how the philosophy behind the pedagogy is enacted in the learning process. This changes the whole conception of evaluation and raises crucial issues of measurement. This issue became the main focus of the overall project and is taken up as a central theme in Paper 5.

Immediate measures within the Modules depended on relating changes in tactics and strategy with the specified purpose for reading, and the outcome of reading. This measure was represented by the Module tests. Short-term measures depended on comparing performance in the Pre- and Post-Training Tests and on comparing changes in attitudes and habits of reading in the Pre- and Post-Training Questionnaire. Long-term measures depended upon changes in grades obtained in academic subjects and on the subjective reports. This battery of measures, together provide evidence for the effectiveness of the Training Programme.

4.2. Long-Term Measures : Follow-up

4.2.1. Academic Grades

Measuring changes in Academic Grades recorded before and after training, provides a longer-term and wider ranging assessment of the Training Programme. Robinson (6) affirms that in the final issue this is the only criterion upon which the effectiveness of a Training Programme should be based. Accordingly, unless subjects have improved in their academic performance, changes in shorter-term evaluation measures, and subjective reports become invalid.

Grades were collected, averaged and compared in two principal verbal academic subjects. Specifically, these were Education and either Physical Education Theory, English, Biology or Creative Design Theory. These grades were compared on a twelve point scale from D- to A+ and by rank order.

4.2.2. Subjective Reports

One term after the training students were asked to present a critical report of the Training Programme and to comment on its subsequent usefulness in their College learning experiences.

4.3. Short-Term Measures : Before and After Training

4.3.1. The Pre- and Post-Training Tests

These Tests had two functions. The assessment of Pre- to Post-Training changes in performance and the diagnosis of subjects' strengths and weaknesses in their Reading-for-Learning skills. The Tests attempted to measure the full range of cognitive abilities according to Bloom's Taxonomy (5). The Tests were designed to measure the following abilities:-

(i) recall of literal knowledge, knowledge of terms, knowledge of specific facts;

(ii) the ability to re-organise, to translate, to interpret, to select;

(iii) the ability to extrapolate from the text;

(iv) the ability to evaluate the text in various ways.

The Pre- and Post-Tests were matched and took the form of 10 multiple choice questions, 10 free response recall questions, 10 paraphrasing questions, 1 summarising question, 2 extrapolation questions and 2 evaluation questions.

4.3.2. The Questionnaire

The questionnaire consisted of 39 questions. Its function was also twofold:-

(i) It measured the particular strengths and weaknesses of students' reading habits and attitudes before and after training.

(ii) In answering the questionnaire before training, the individuals' attention was focused onto his or her reading habits and attitudes. It functioned as a consciousness raising device. Thus alerted, the individual was in a better position to review the quality of his performance during the subsequent Training Programme. Students were asked to respond to each question on a five point scale. The five points consisted of the statements 'always', 'often','sometimes', 'occasionally' and 'never'. Subjects were asked to circle the statement most applicable for each question.

A computer programme for McQuitty hierarchical cluster analysis was used to analyse the questionnaire results. Nine distinct clusters emerged -

1. Ease of Reading
2. Speed of Reading
3. Enjoyment of Reading
4. Planning of Reading
5. Flexibility of Reading
6. Selectivity in Reading
7. Note-making while Reading
8. Organisation during Reading
9. Query during Reading

The Questionnaire is presented in Appendix 3.

4.4. Immediate Measures : In-Training

4.4.1. The Training Modules

Charts were provided for subjects to record various measures of their performance on each exercise within each Module:-

(i) scores on objective tests and assessments by tutors and peers, using Flow Diagrams and Meaning Structures;

(ii) measures of reading behaviour including reading rate, tactics and strategies.

5. RESULTS: STUDY ONE

5.1. Academic Change

Changes in Academic Performance for the experimental and control groups are shown in Tables 2 and 3. These show that although the influence differed for each student, significant improvements in academic performance in Education and in Physical Education Theory, had taken place. Records of performance in Education, one term later, showed that this improvement was maintained.

5.2. Subjective Comments

The students' subjective reports were very detailed and wide-ranging. However most were positive, though critical of some aspects of the Training Programme. Students unanimously agreed that the Flow Diagram Technique had helped them to become more aware of text organisation. This, together with a greater awareness of 'purpose' and 'strategy' had contributed to the success of the programme.

A selection of students' comments is presented below:-

"I am much more aware of the ways in which I read. I can describe these ways to somebody else quite clearly. I have learnt several new ways or tactics of reading for different purposes. In addition, I feel much more confident about my reading in general - I feel I can solve most of my reading problems."

"I have been able to relate reading for pleasure and reading for learning much more clearly for myself. I no longer see these as separate ideas, - they kind of overlap."

"I find that I now think about my reading before I start, sometimes during my reading and often after reading. My thinking is in terms of purposes, methods and outcomes of my reading. The Flow Diagram Technique I find I am now using semi-intuitively in most of my reading."

"Before I began the training course I was having a lot of problems with reading. I became bored and had difficulty in remembering a passage. Now, my attitude, method and results of reading have changed."

"I wasn't as keen on the Questionnaire and Pre-tests, but I have been immensely stimulated by the training course. On the whole it was fun (though I sometimes felt like giving up). I think I'm going to have a go at adapting some of the ideas I learnt about reading to help the kids in my next teaching practice. I hope they'll give me a chance to try this at the school. I wouldn't have missed the chance of opting for the course and am grateful that it was offered gratis but I would have paid."

"I liked the idea of marking my own tests in the Training Course and in the Pre- and Post-tests. I learnt a lot from this and realised how useful the Flow Diagram Technique was for this purpose. I think I can adapt some of the ideas I learnt from this Course not only to teach reading, but for my general classroom management."

"It would have been very useful to have done this type of exploration of reading skills before A level - or even O level. I found the Flow Diagram Technique interesting - I am going to use this for revision and in examinations. I am getting more out of my general reading."

EDUCATION COURSE

● immediately after training

✖ one term later

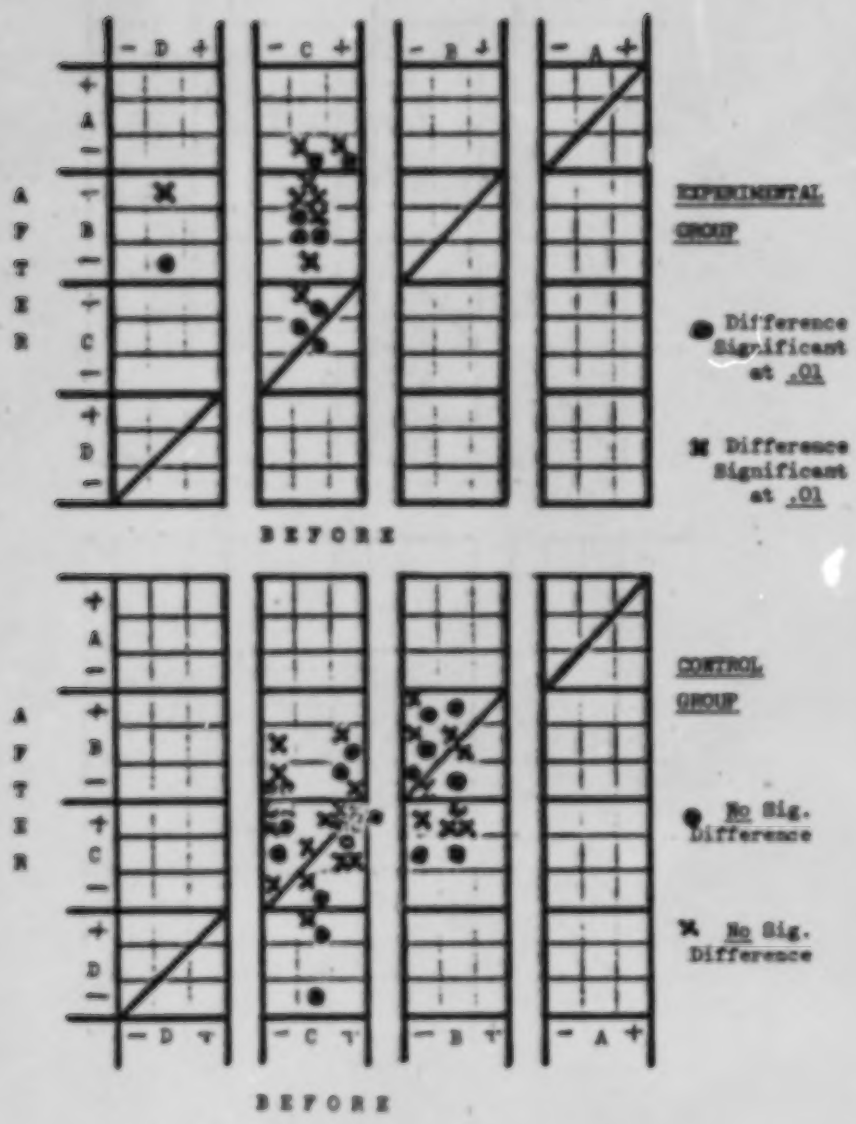


Table 2 CHANGE IN ACADEMIC PERFORMANCE

PHYSICAL EDUCATION

THEORY COURSE

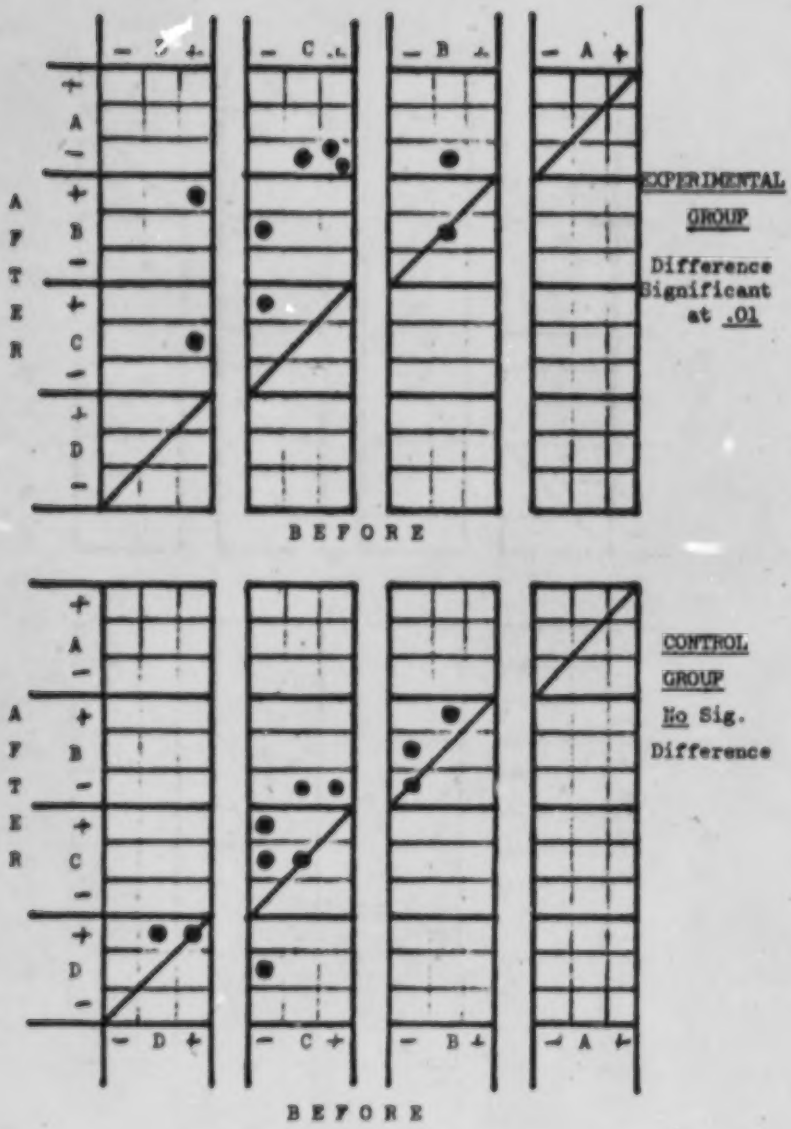


Table 3 CHANGE IN ACADEMIC PERFORMANCE

Comments from Teaching Staff

The general opinion of the tutorial staff in Education was that the volunteer students did stand out in the group. For example, they were more participative in seminars and tutorials and their written work had improved in organisation and quality. The students seemed to be better able to work on their own, plan schedules of work and to implement these, effectively. Some of the staff became themselves interested in the Training Programme, and attended some of the sessions.

5.3. Changes in the Questionnaire

Changes in student responses to the Questionnaire are shown in Table 4.

No. of Q's.	Sub - Scale +	Significance	Sub - Scale -
7	I find words and sentences easy to read	NS 0	I often stumble over unusual words and long sentences
9	I read for main ideas	NS ←	I read to remember facts
5	I question what I read	.01 ←	I accept what I read
6	I read fast	NS 0	I read too slowly
9	I am flexible in using various methods of reading for learning	NS 0.1 ←	I always read in the same way
6	I plan my reading	.001 ←	I seldom plan my reading
5	I search for organisation in a text	.01 ←	I take a text as it comes
6	I like reading for learning	.001 ←	I dislike reading for learning
6	I take few notes	.01 ←	I take many notes

KEY: N.S. = Not significant
.01 = Significance level

Table 4 CHANGE IN STUDENT RESPONSES TO A QUESTIONNAIRE

Students question what they read; plan their reading; search for organisation in a text; make fewer notes, and enjoyed reading more after the Training Programme. There was also a trend towards becoming more flexible in their implementation of strategies and tactics, during reading.

5.4. Pre- and Post-Test Measures

Changes in the Pre- and Post-Test Scores and in speed of reading for the experimental and control groups are summarised in Table 5.

	Experimental Group		Control Group
	Pre-Test	Post-Test	Post-Test
Lines per minute	7.8	3.8	9.5.
Facts	67%	90%	48%
Main Items	29%	82%	30%

Table 5 Changes in Learning Performance

The combined score and speed of reading for individual subjects in the experimental group in the Pre- and Post-Tests and the control group in the Pre-Test is shown in Figure 3. This shows that after training, the experimental group took longer over their reading but significantly improved their test score. The longer time spent in reading is indicative of efforts being made to explore and develop newly learnt tactics. Because the experimental group has taken longer, the group can be said to have got worse! This issue is dealt with in the Implications Section of this paper. The relationship between the changes in the factual item score and main item score for the individual subjects in the experimental group, and the control group in the Post-Test, is shown in Figure 4. This shows that improvement in the selection of main statements was highly significant. There was also a distinct improvement in the factual item score.

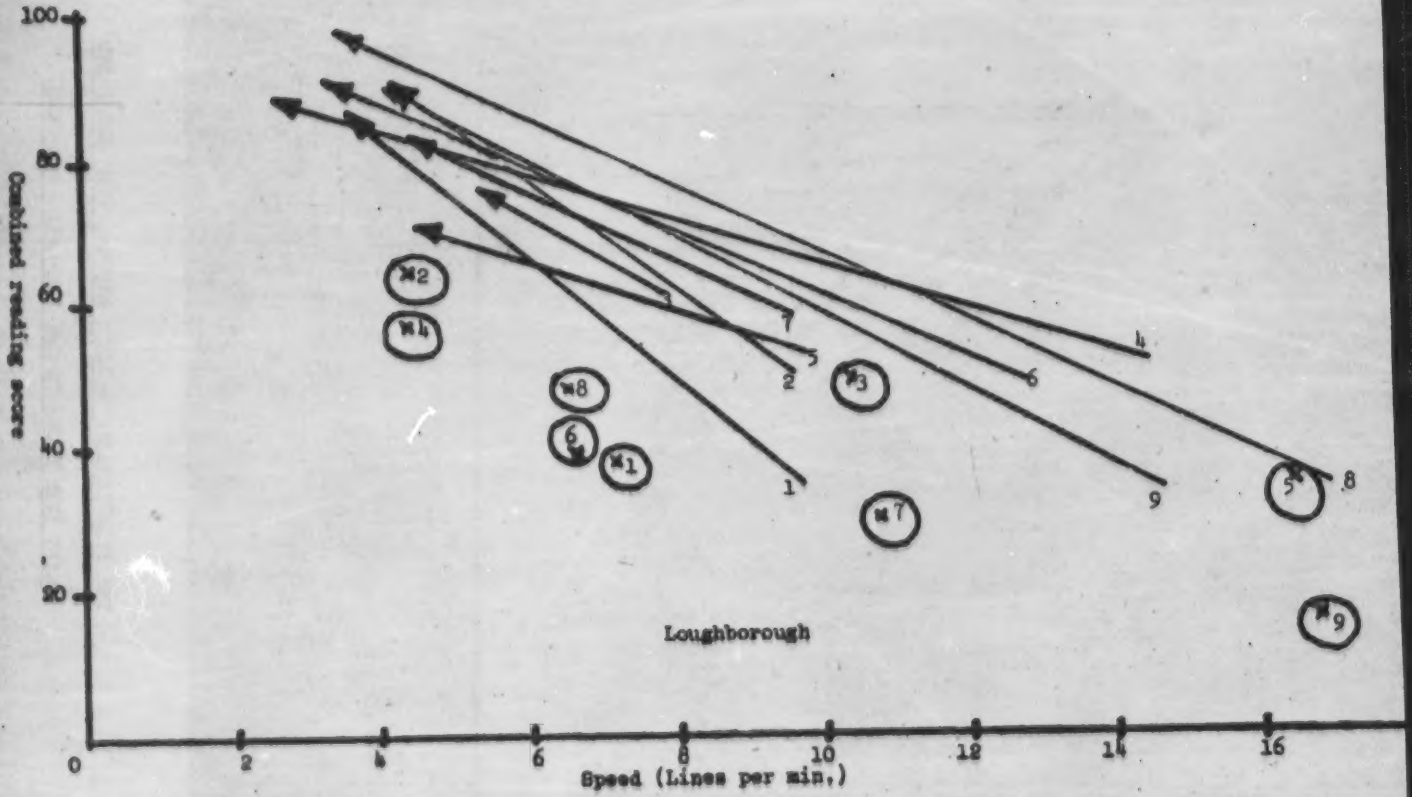
An analysis of the reading records for the experimental group in the Pre- and Post-Tests and for the control group in the Post-Test showed that there appeared to be four possible patterns of activity (or tactics) within the reading strategies. These have been described in detail in a previous publication (5). Briefly, these consist of:-

(a) Smooth read tactic - more or less even read from beginning to end.

(b) Item read tactic - a read showing hesitations within the sentences, or at the end of sentences or at the end of the paragraphs.

(c) Search read tactic - a read showing considerable backward and forward scanning through the text.

(d) Think sessions - think sessions occur at the end of a read tactic or at the end of a complete strategy. These signify that various kinds of check procedure are being implemented.



W Controls

Fig. 3

CHANGES IN READING SCORE AND SPEED

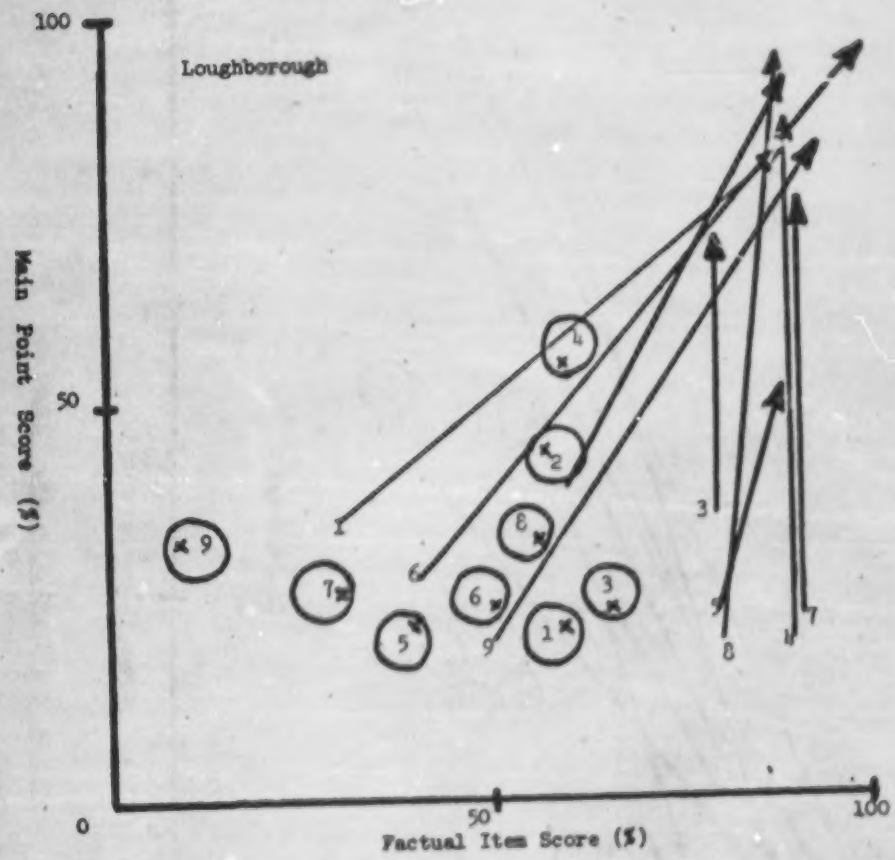


Fig.4 THE RELATIONSHIP BETWEEN FACTUAL ITEM SCORE AND MAIN ITEM SCORE IN THE PRE- AND POST-TEST

Subjects combine these basic tactics in various ways. Table 6 shows the distribution of the tactics for the experimental group in the Pre- and Post-Tests and for the control group in the Post-Test. This table distinguishes those combinations of tactics which are characteristic of the experimental group in the Pre-Test and of the control group in the Post-Test, from those tactics which typify experimental group in the Post-Test.

TACTICS	CONTROL & EXPERIMENTAL PAIR										COMMENT
	1	2	3	4	5	6	7	8	9	TOTAL	
SMOOTH ONLY				E		E		E	C E	C E T 1 4 0	After training, the experimental group never used smooth reads on their own.
SMOOTH COMBINED WITH OTHER TACTICS	C E T	E T	E T	C T		C T	C E T	C T	T	C E T 5 4 8	After training, the experimental group double their use of this strategy.
ITEM	C T	C E T	C E T	T	C E T	C T	C T	C T	T	C E T 7 3 9	After training, the experimental group double their use of this tactic.
SEARCH	E T	T	T	C T	T	T	E T	T	T	C E T 1 2 9	This tactic is characteristic of performance after training.
THINK SESSION	T	T	T	T	T	T	T	T	T	C E T 0 0 9	This tactic only appears after training.
NOTE TAKING	C E	C E	C E	C T	E T	C				C E T 5 4 2	Note making sessions occur more frequently in the Pre-test and in the control group.

Table 6 THE DISTRIBUTION OF TACTICS IN EXPERIMENTAL AND CONTROL GROUPS

C = Control (Post-Test)
E = Experimental (Pre-Test)
T = After Training(Post Test)

Strategies in the Pre-Test consisted of one or more smooth read tactics (E4, E6, E8, E9) a smooth read in combination with an item read tactic (E2, E3); an exclusive item tactic (E5); or a smooth read in combination with a search tactic (E1, E7). Only two subjects showed evidence of searching backwards and forwards in the text. Similarly, control group strategies in the Post-Test consist d of; one or more smooth read tactics (C9); a smooth read in combination with an item read tactic (C1, C6, C7, C8), and exclusively item tactic (C2, C3, C5) or a smooth read in combination with a search tactic (C4). Only one control subject showed evidence of searching backwards and forwards in the text.

A selection of strategies and scores for the experimental group in the Pre-Test and the control group in the Post-Test is shown in Figures 5 and 6.

The reading strategies of the experimental group in the Post-Test were more elaborate, in that additional read tactics were used. This accounted for the longer reading time shown in Table 5. Two typical strategies as well as scores in the Tests are shown in Figure 7.

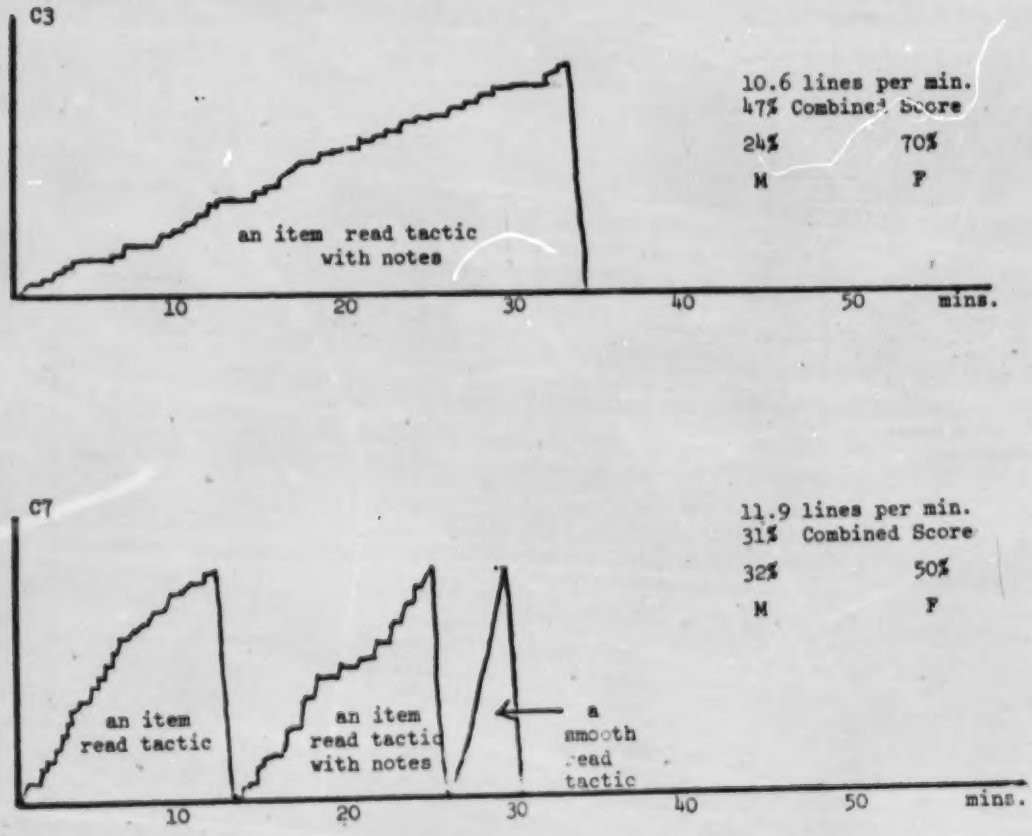


Fig.5 READING STRATEGIES AND SCORES OF 2 CONTROL SUBJECTS IN THE POST-TEST

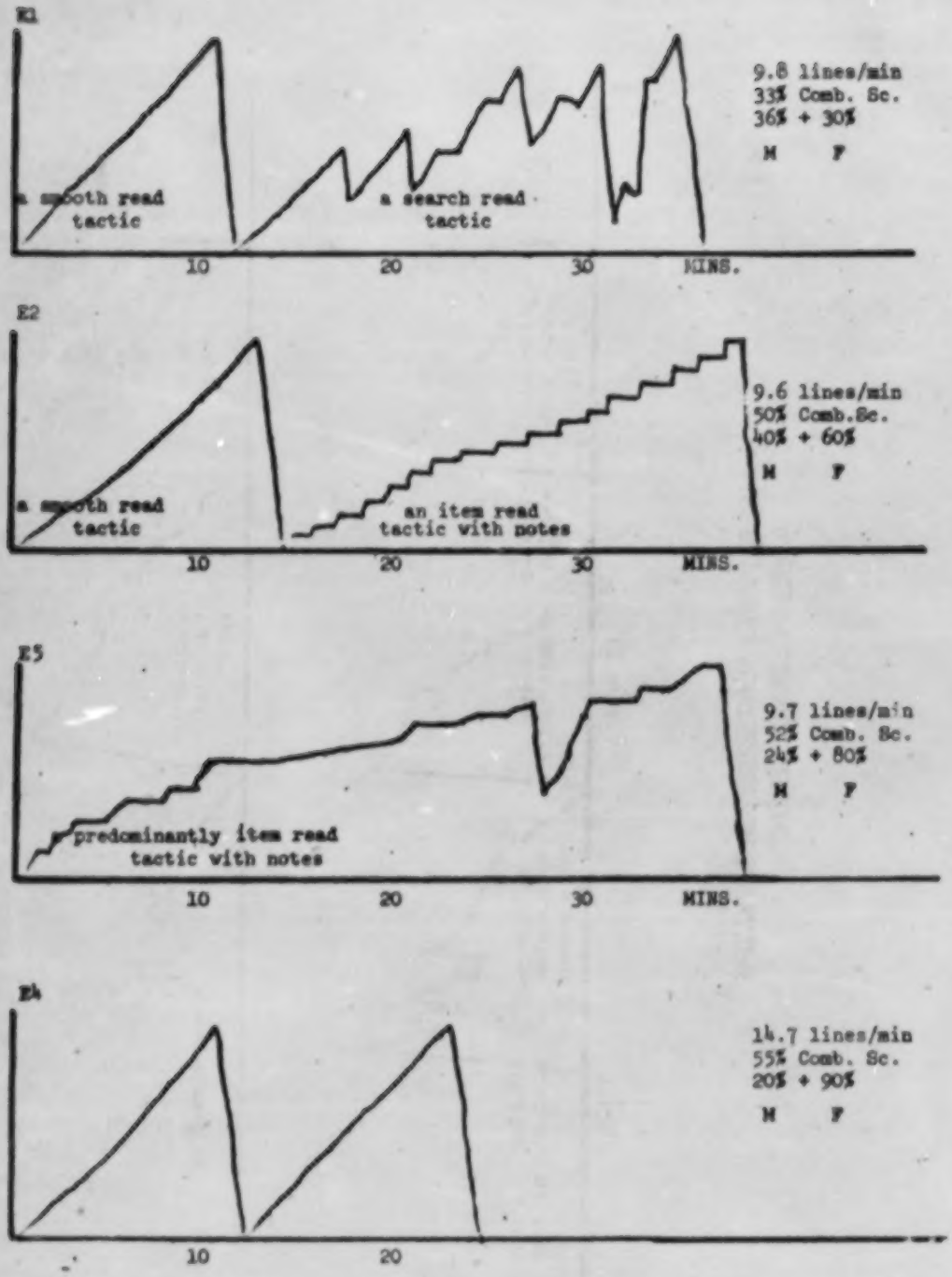


Fig.6 READING STRATEGIES AND SCORES OF 4 EXPERIMENTAL SUBJECTS IN THE PRE-TEST

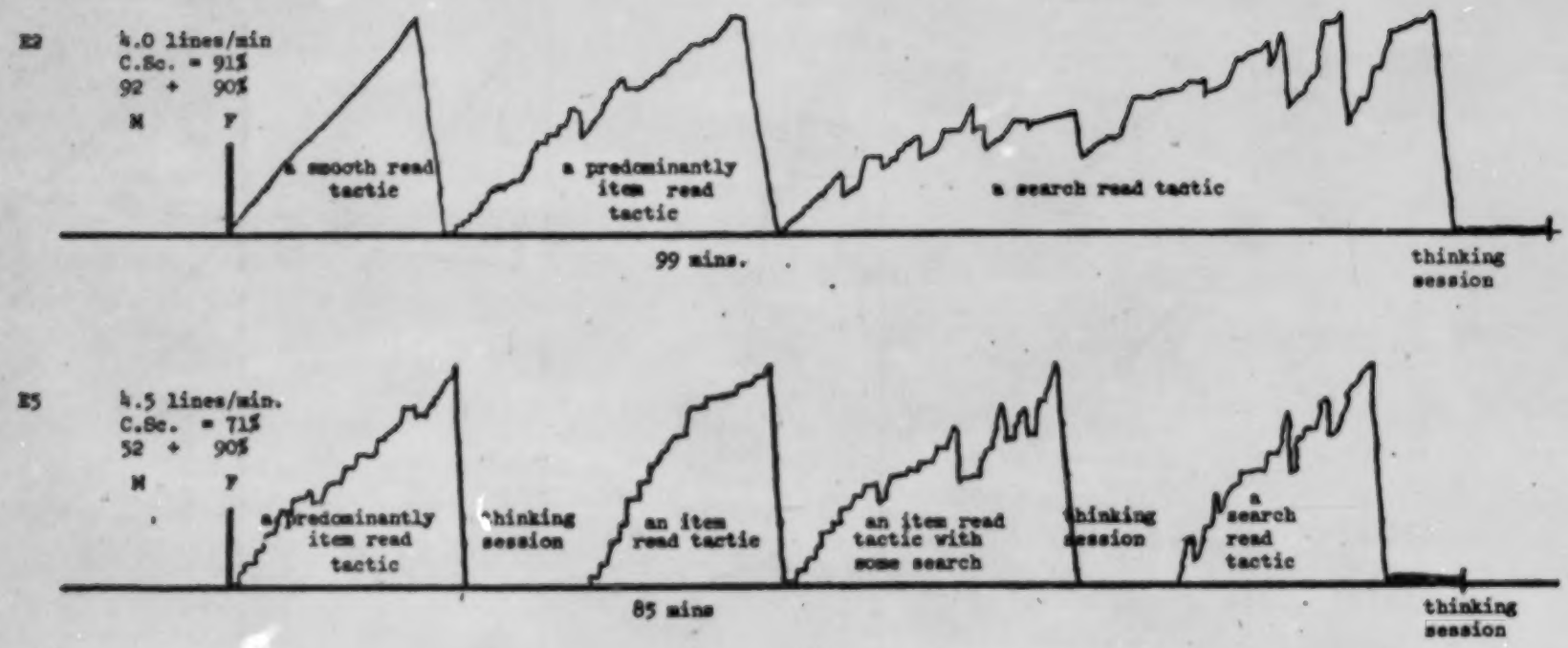


Fig.7 READING STRATEGIES AND SCORES FOR 2 VOLUNTEER STUDENTS IN THE POST-TEST

5.5. Changes of Performance achieved within the Modules

Changes were recorded:-

(i) in the tactics which combined to form the reading strategies;

(ii) in the reading rate, and

(iii) in test scores.

The reading rate (in lines per minute) and scores for the first and last exercise in the Modules, for each subject, are shown in Table 7.

MODULE 1

Subject	FIRST Lines/Min	FIRST Performance	LAST Lines/Min	LAST Performance
1	9	90%	29	60
2	4.2	100	16	100
3	6.2	70	36	80
4	9	80	21	80
5	9	80	20	80
6	7	90	22	80
7	7	100	30	100
8	13.5	80	29	80
9	9	90	24	80

MODULE 2

1	30	80	19	80
2	12.5	80	14	80
3	30	90	30	80
4	20	80	11	80
5	20	80	14.5	80
6	10.5	80	12	80
7	25	80	20	80
8	35	50	12.5	70
9	22	70	9.5	80

MODULE 3

Subject	Lines/Min	Facts	Terms	Lines/Min	Facts	Terms
1	15	60	100	13		80
2	10	30	85	7	80	100
3	16	55	100	11.5	100	100
4	*					
5	*					
6	7	75	80	9.2	100	100
7	*					
8	*					
9	*					

(* Power Strike)

MODULE 5

Subject	Lines/Min	Performance	Lines/Min	Performance
1	2	57	2.8	100
2	1.7	71	1.0	75
3	3.5	57	5.7	71
4	2.7	57	5.7	86
5	-	71	-	71
6	1.7	57	2.9	71
7	5	30	5.7	71
8	2.5	43	1.4	75
9	2.6	57	5.3	100

Table 7 CHANGE IN EACH TRAINING MODULE (FIRST AND LAST EXERCISE)

The tactics and strategies for the first and last exercise in four of the Modules for selected subjects, are shown in Figure 8.

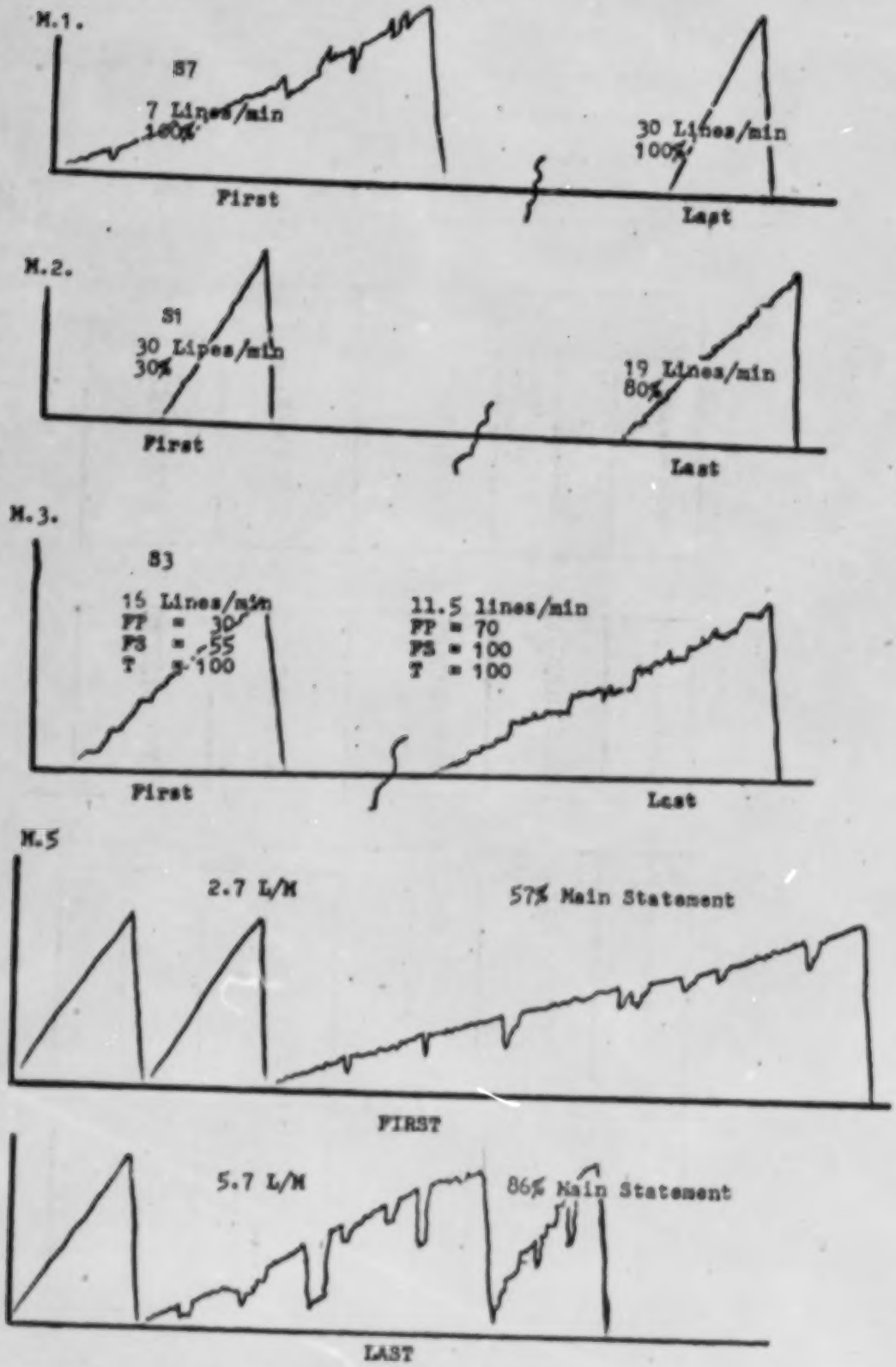


Fig.8 CHANGES IN READING STRATEGY FOR EACH MODULE

Figure 9 shows that improvement in Module 1 was predominantly one of economy of tactics, while maintaining performance. Figure 10 shows that improvement in scores in Module 5 was marked but no conspicuous changes were apparent in the strategies. Detailed examination of the Read records, however, showed that there were subtle changes in tactics, but these were not reflected in changes in overall time.

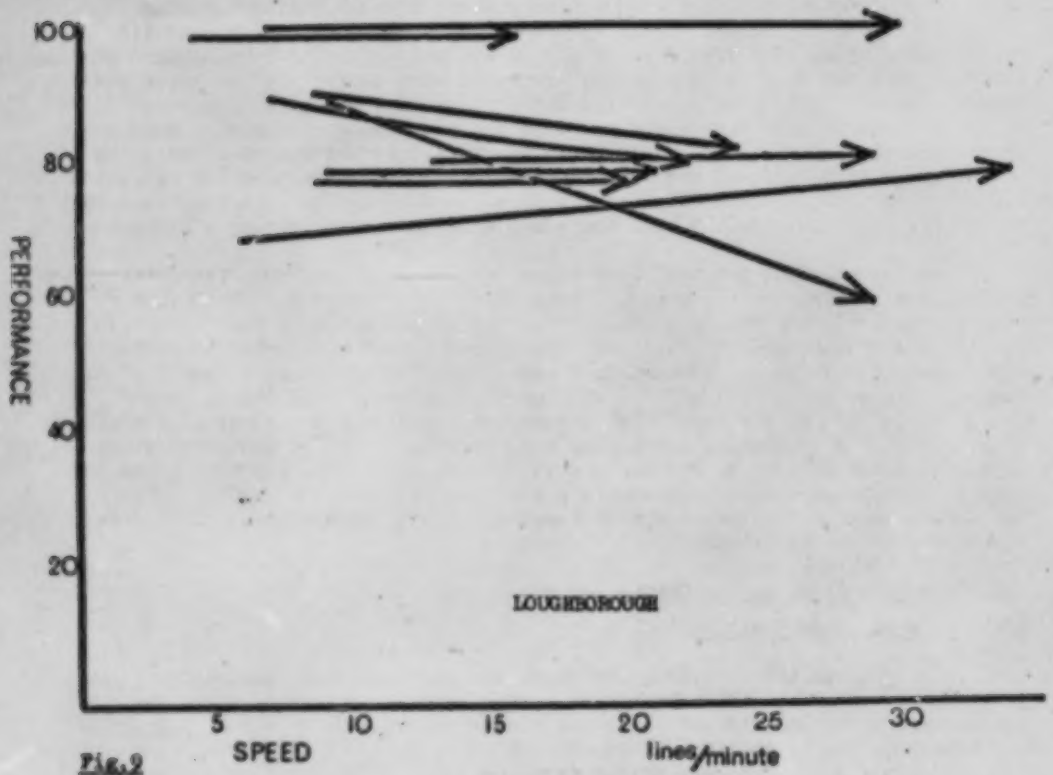


Fig.9

LEARNING ON MODULE 1

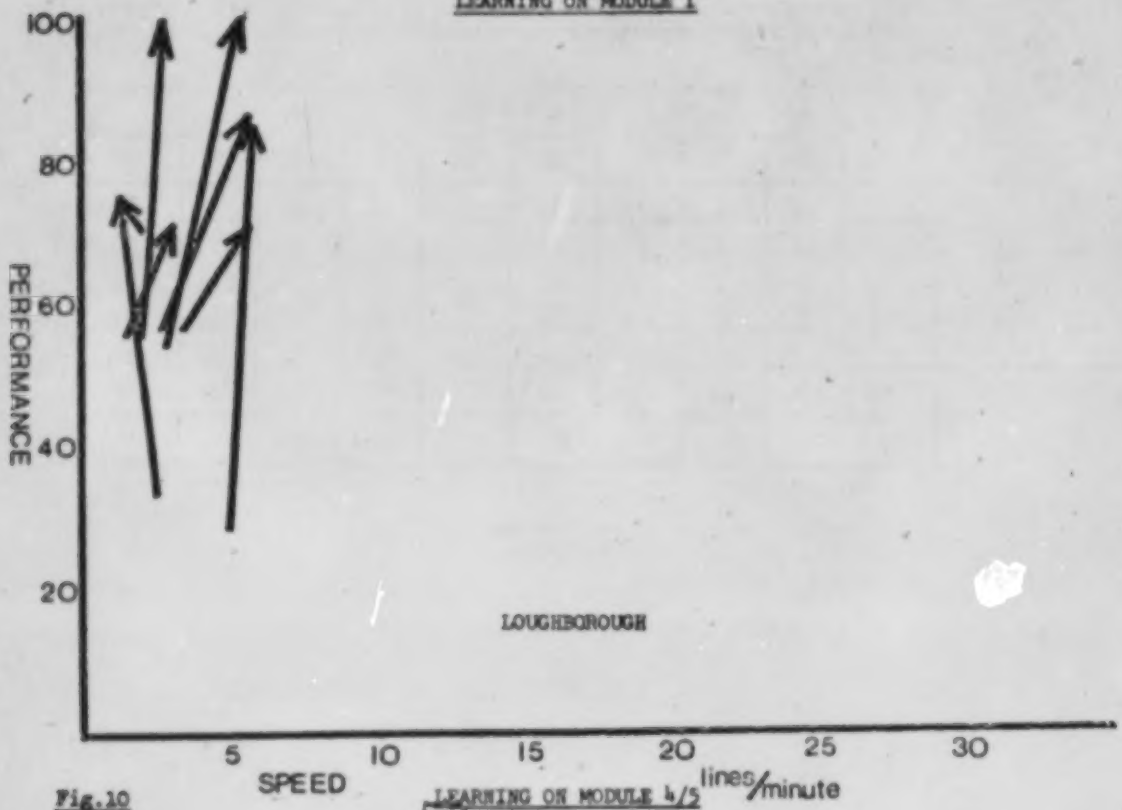


Fig.10

LEARNING ON MODULE 4/5

6. RESULTS: STUDY TWO

6.1. The Problem of Results

This second study took the form of a pilot investigation into ways and means of relaxing constraints, thus encouraging greater freedom during training. However, this was attempted within the conceptual framework, which embodied the researcher's model of a specified 'best' or optimal method of Reading-for-Learning. Students came and went as they chose; repeated some learning experiences and missed others; criticised the design and content of the Modules (Appendix 2); modified these to suit themselves and invented alternative modules. Some students preferred not to respond to the Questionnaire and not to attempt the Post-Test. Most students preferred to use some of the time they had allocated for training, for informal discussion with each other and/or with the researcher. Such individual choice meant that there was no point in recruiting a control group.

From the orthodox point of view there were no clear cut objective statistical results, which typified the group. This experience demanded a shift in the interpretation of the research data. Instead of asking "What kind of result was typical for the group?", the researcher became more interested in asking - "What sort of changes did each student experience during and as a result of his individually sought learning?" - "What sort of problems were thrown up or clarified for the researcher?" - "What were the learning experiences of the researcher?" A case study describing the experiences of one volunteer student serves to identify some of the changes which took place during training and in such longer-term measures as academic grades and subjective reports. Few subjects completed the Pre- and Post-Tests and the Questionnaire. This data therefore, is not reported.

6.2. The Case Study in the Context of the Group.

Time Spent in Training

Table 8 shows how individual students managed their time during training. All students spent considerably longer on Module 5 but otherwise there was conspicuous individual variation in the time spent on each Module. Subject 6 has been selected as the Case Study, for this report. This subject is no more typical of the group than any of the other subjects. This subject's individual exploration of the Modules, changes in academic grades in two main subjects and extracts from his subjective reports are presented in Sections 6.3, 6.4 and 6.5 respectively.

		SUBJECTS								
		1	2	3	4	5	6	7	8	9
MODULES	1	1¼	1	1¼	1½	1	2¾	3	3	2½
	2	1½	3	2	1½	¾	2	2¼	5	2¼
	3	2	3¾	3	2½	2½	5¼	3¾	2½	2¾
	4	2	¾	2½	2½	1¼	3½	3¾	2½	2½
	5	-	7	18	14½	19½	22	-	-	9½
	M & D	12½	16½	15½	18½	17½	14	8½	15½	8½
	TOTAL	19¼	32	42¼	41	41½	49½	21½	28½	28

(*See P.33)

S 6 = Case Study

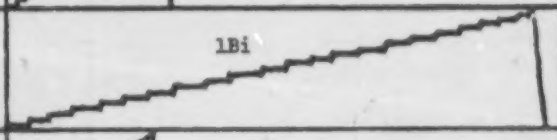
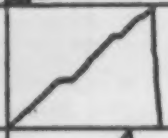
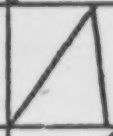
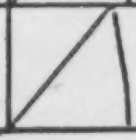
Time spent on Modules is represented by:-
Input Time on Reading Recorder
Output Time on Tests
Assessment of Performance - tests and strategy.
M & D = Time spent on evaluation.

Table 8 TIME SPENT IN THE TRAINING PROGRAMME

6.3. The Case Study (86)

Measurement and Feedback Within the Modules

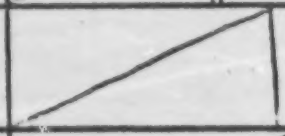
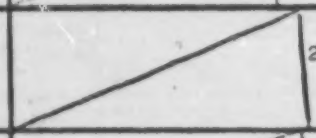
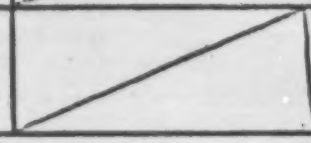
MODULE 1 - Recognition of the Literal Knowledge of the Text

Lines per Minute	Test Score	The Read Record or Input/ Tactics and Strategy	Comment on the Strategy
14	50	1B	An intersentence item read tactic with no notes
4	90	 1Bi	An intra-sentence item read tactic, no notes
15	70	 1Bii	A predominantly smooth read tactic
17	60	1BiiB	A predominantly smooth read tactic
25	50	 1R	A smooth read tactic
20	60	1Rii	A smooth read tactic
20	70	 1RiiB	A smooth read tactic

General Comment

The purpose in Module 1 is to be able to answer multiple choice tests demanding recognition of the literal knowledge in the text. Against a gradient of increasing text length and complexity (B.90 lines R.140 lines), the subject has improved in performance and become more economical in his text processing time. When the first and last exercises are compared the subject has increased his reading rate by 6 lines per minute, changed his strategy of reading from a predominantly "intersentence item read" tactic to a "smooth read" tactic and improved his test score by 20%.

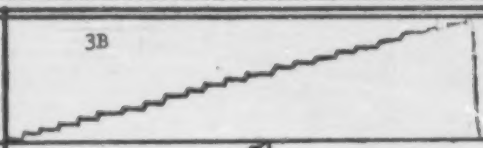
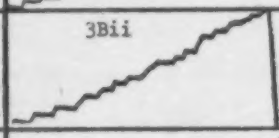
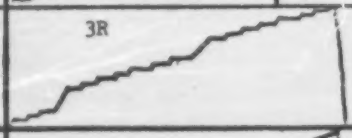
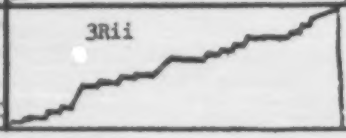
MODULE 2 - Recall of the Literal Knowledge of the Text

Lines per Minute	Test Score	The Read Record or Input/ Tactics and Strategy	Comment on the Strategy
24	50	2B	A smooth fast read tactic
19	40	 2Bii	A smooth read tactic
17	80	 2BiiB	A smooth read tactic
17	70	Sr	A smooth read tactic
17	80	 2Rii	A smooth read tactic

General Comment

Reading the text continuously once in order to be able to recall the knowledge of the text effectively in a form close to the original (B) or in a translated form (R) depended on the development of an optimal reading rate, which was slower than that for Module 1. This subject was able to accomplish the task effectively by processing the text 'smoothly'! Some subjects' optimal reading strategy for this task consisted of one "item read" tactic, at a speed ranging from 12 - 15 lines per minute. Other subjects' optimal reading strategy consisted of two "smooth reads", at a speed of 20 - 25 lines per minute.

MODULE 3 - The Identification of Terms and Specific Facts (headings as above)

10	FS FP 65 85 TS TP 82 46	 3B	An intra-sentence item read tactic from beginning to end
18	FS FP 60 75 TS TP 72 100	 3Bii	An intra-sentence item read tactic of increasing selectivity
14	FS FP 70 88	 3R	An intra-sentence item read tactic of increasing selectivity
14	FS FP 90 100 TS TP 100 100	 3Rii	An intra-sentence item read tactic of increasing selectivity

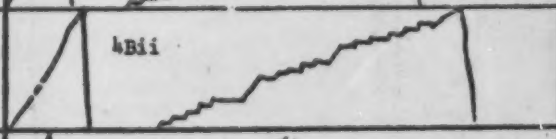
MODULE 3 (cont'd)

FS= Total number of correct items out of subjects own total selection.
FP= Total number of correct items out of total possible.
TS= Total number of correct terms out of subjects own total selection.
TP= Total number of correct terms out of total possible.

General Comment

The subject has improved in score and become more selective and economical in his reading behaviour. Reading effectively in order to select specific facts and terms in a text depends on a detailed processing of the text. As the purpose becomes more sharply defined in relation to the text, the read tactic optimises to that of continuous smooth reading with selective hesitations in the text, which relate to the specific facts and terms. The elaborate read tactic and the slower reading rate which typifies Module 3, indicates that this learning task is cognitively more demanding than that for Modules 1 and 2.

MODULE 4 - The Selection of Facts and Terms from the Text which Relates to the Subject's prospectively Defined Purpose

Lines per Minute	Test Score	The Read Record or Input/ Tactics and Strategy	Comments on Strategy
8	90	4B	A complex strategy made up of 3 separate activities - a smooth tactic, a think session
7	100	 4Bii	and a selective intersentence specific tactic.
11	100	4R	ditto.

General Comment

The cognitive activity demanded by the Module was of two kinds:-

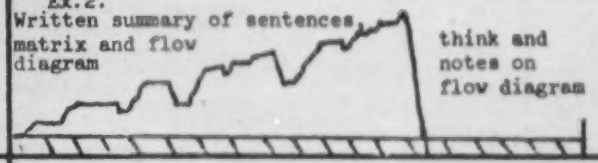
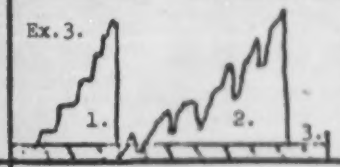
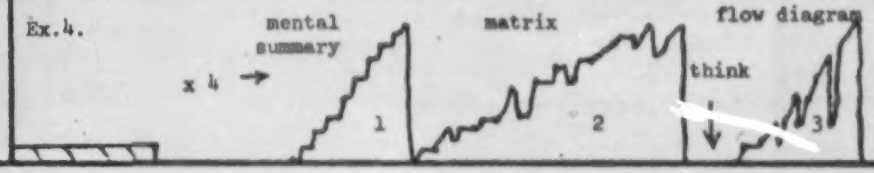
(i) to negotiate the text in order to arrive at a self-determined purpose for reading it;

(ii) to process the text in order to achieve this purpose.

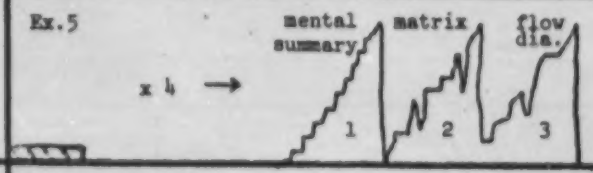
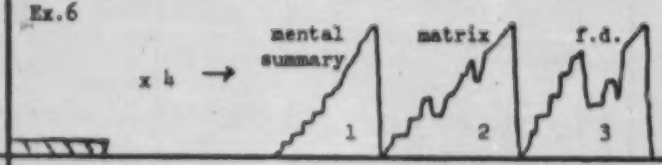
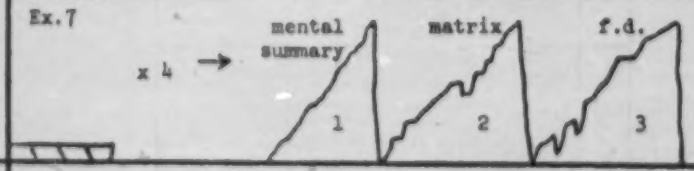
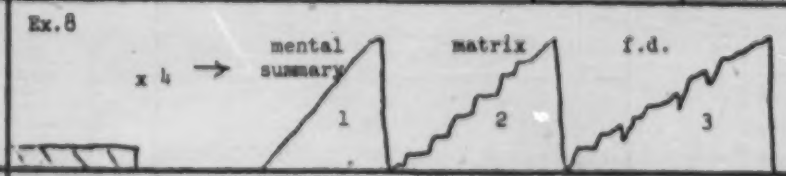
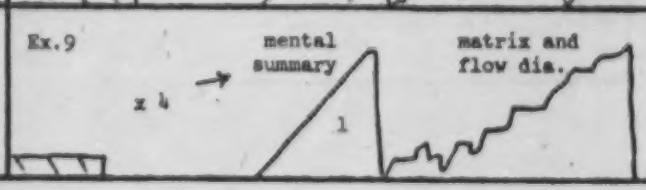
Tactic 1, a "smooth read" from beginning to end represented a brief survey of the text. This was followed by a 'think' session in which the subject consolidated his reading purpose and planned his reading strategy. This was negotiated with the researcher. The purpose was articulated in the form of a hierarchy: the overall theme of the self-defined purpose superordinated the subsidiary themes, which represented questions relating to specific facts and terms in the text.

Tactic 2, a selective intersentence specific read, represents the subject's efforts at processing the relevant parts of the text. There were no changes in tactics for this Module, but when the first and last exercises are compared the reading rate has been increased and performance improved. This Module superordinates Modules 1, 2 and 3 within the Purpose Taxonomy. The subject has learnt to combine previously learnt tactics (in Modules 1, 2 and 3) in order to achieve a higher order purpose.

MODULE 5 - The Selection of Main Ideas

Lines per Minute	Test Score	The Read Record or Input/Tactics and Strategy	Comments
0.9	100	Ex.1. Written summary of sentences, matrix of relationships and flow diagram	A search read tactic with hesitations and notes followed by a think or note session.
1.5	70	Ex.2. Written summary of sentences, matrix and flow diagram 	A search read tactic with hesitations and notes followed by a think and note session.
2.7	100	Ex.3.  1. mental summary 2. matrix of relationships 3. notes on flow diagram	A complex strategy composed of an inter-sentence item read tactic without notes and a search read tactic with hesitations and notes.
6	100	Ex.4. 	A complex strategy composed of an inter-sentence item read tactic without notes, and a search read tactic with hesitations and notes and a search tactic with a few hesitations and few notes.

- 30 -

11.6	70	Ex.5 	A complex strategy composed of an intersentence item read tactic without notes, and a search read tactic with hesitations and notes and a search tactic with a few hesitations and notes.
9	100	Ex.6 	A complex strategy composed of an intersentence item read tactic without notes, and a search read tactic with hesitations and notes and a search tactic with a few hesitations and notes.
8.6	90	Ex.7 	A complex strategy composed of a smooth read tactic and two search read tactics with hesitations and notes but with less search than tactics 2 and 3 in earlier exercises.
6.6	100	Ex.8 	A complex strategy made up of - (i) a smooth tactic, (ii) an intersentence specific tactic, (iii) a search tactic with hesitations and notes.
9	100	Ex.9 	A complex strategy made up of (i) a smooth tactic, (ii) a search tactic with hesitation and notes.

General Comment

Progress through the Module shows clearly that while the subject's scores remain fairly constant, major changes have taken place in the strategy. Changes in reading behaviour are particularly apparent from -

Ex. 2 ——→ Ex.3
Ex. 3 ——→ Ex.4
Ex. 4 ——→ Ex.7
Ex. 8 ——→ Ex.9

These changes can be related to mastery of the procedures offered in the Module and discussion revealed that the subject is inventing his own tactics for organising the skills in more economical ways.

If the first and last exercises are compared, the subject has increased his reading rate nine times and maintained his score performance. His reading strategy has become much more differentiated.

6.4. The Case Study in Context of the Group

Changes in Academic Performance

Tables 9 and 10 show the changes in academic performance in Education and one other main subject, for the whole experimental group. The grades shown represent an average of three written assignments, excluding tests. The 'before' grades represent academic performance in the middle term of the first year. The 'after' grades represent academic performance in the last term of the second year.

Subject	Before	After	Change
1	C+	C+	0
2	D	B-	+5
3	C-	C+	+2
4	A-	A+	+2
5	C	C+	+1
* 6	C-	B-	+3
7	C+	C	-1
8	C-	C+	+2
9	C+	B-	+1

Significant Improvement .01

* The Case Study.

Table 9 CHANGES IN ACADEMIC PERFORMANCE - EDUCATION COURSE

M/Subject	Subject	Before	After	Change
English	1	C+	B-	+1
"	2	[illegible]	C+	+3
Biology	3	C	C+	+1
"	4	B+	A	+2
"	5	C-	C+	+2
* Creative Design Theory	6	D+	C+	+2
English	7	C-	C+	+2
Creative Design Theory	8	C-	C+	+2
Creative Design Theory	9	C	B-	+2

Significant Improvement .01

* The Case Study.

Table 10 CHANGES IN ACADEMIC PERFORMANCE - MAIN SUBJECT

There is a significant correlation between the amount of change in academic performance and the total number of hours spent in the Training Programme. Table 11 shows the relationship between the combined change in academic grades and number of training hours.

Subject	Combined Change	Training Time in Hours
2	+8	32
*6	+5	49½
4	+4	40
8	+4	28½
3	+3	42½
5	+3	41½
9	+3	28
7	+1	21½
1	+1	19½

Spearman's rho = .583 n=9 Probability = .05

*The Case Subject

Table 11 THE RELATIONSHIP BETWEEN COMBINED ACADEMIC CHANGE AND TRAINING TIMES

It is of interest that S1 and S7 made least progress academically and these subjects chose to exclude Module 5 (the selection of main ideas and the Flow Diagram Technique) from their Training Programme. They also spent the least amount of time on the Training Programme.

6.5. The Case Study: Personal Comments

Some of the subjective comments made by Subject 6 selected for the Case Study are reported below. To some extent, these comments are fairly typical of the group, but each individual also offered his own unique contribution.

"I found Modules 4 and 5 really enjoyable. These Modules have helped me to be more precise and to have confidence in getting rid of irrelevant things. This is very useful for me in my college studies. It has helped me to be more selective in answering questions, putting down what I want, always checking as I do so, for ambiguities in meaning."

"As a result of Module 1, I now find my reading speed has gone up to 30 - 35 lines per minute for paperbacks, which I read for leisure."

"I do more reading now for work and leisure and I sometimes find it hard to separate the two."

"Modules 4 and 5 have also helped me in arguments and general discussion. I try to be more precise, logical and clear."

"I feel that my standard of work has gone up all round and I know I have moved up 20 places on the yearly education list." (This statement was confirmed by reference to the computerised list for the end of the year.)

"I have more confidence in many things as a result of my progress in reading."

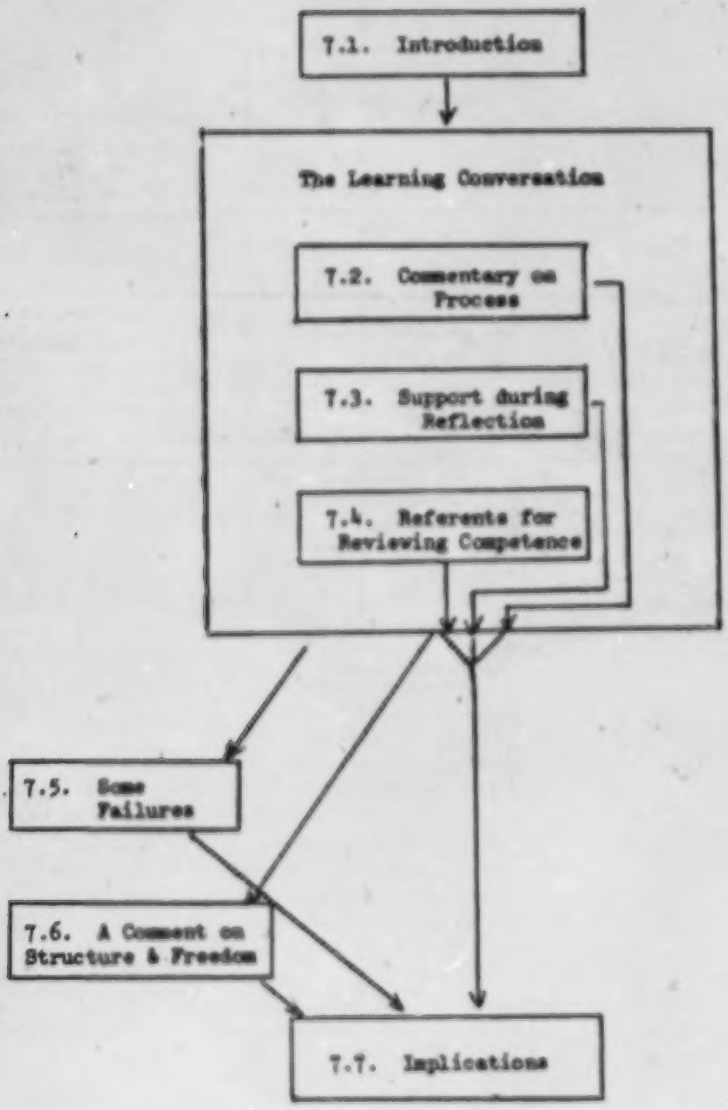
"The range of my private reading is wider, especially on the science side, which was very weak due to my poor ability at school."

"I definitely try to plan my reading now, the purpose and the method I use, and I am not afraid to change my plan as I go along, but I watch this carefully."

"I can concentrate better when I read, i.e. reading with T.V., music in a crowded room and on a bus."

"The experience has given me techniques to try out a child-centred approach in my teaching, not only in reading, but all round."

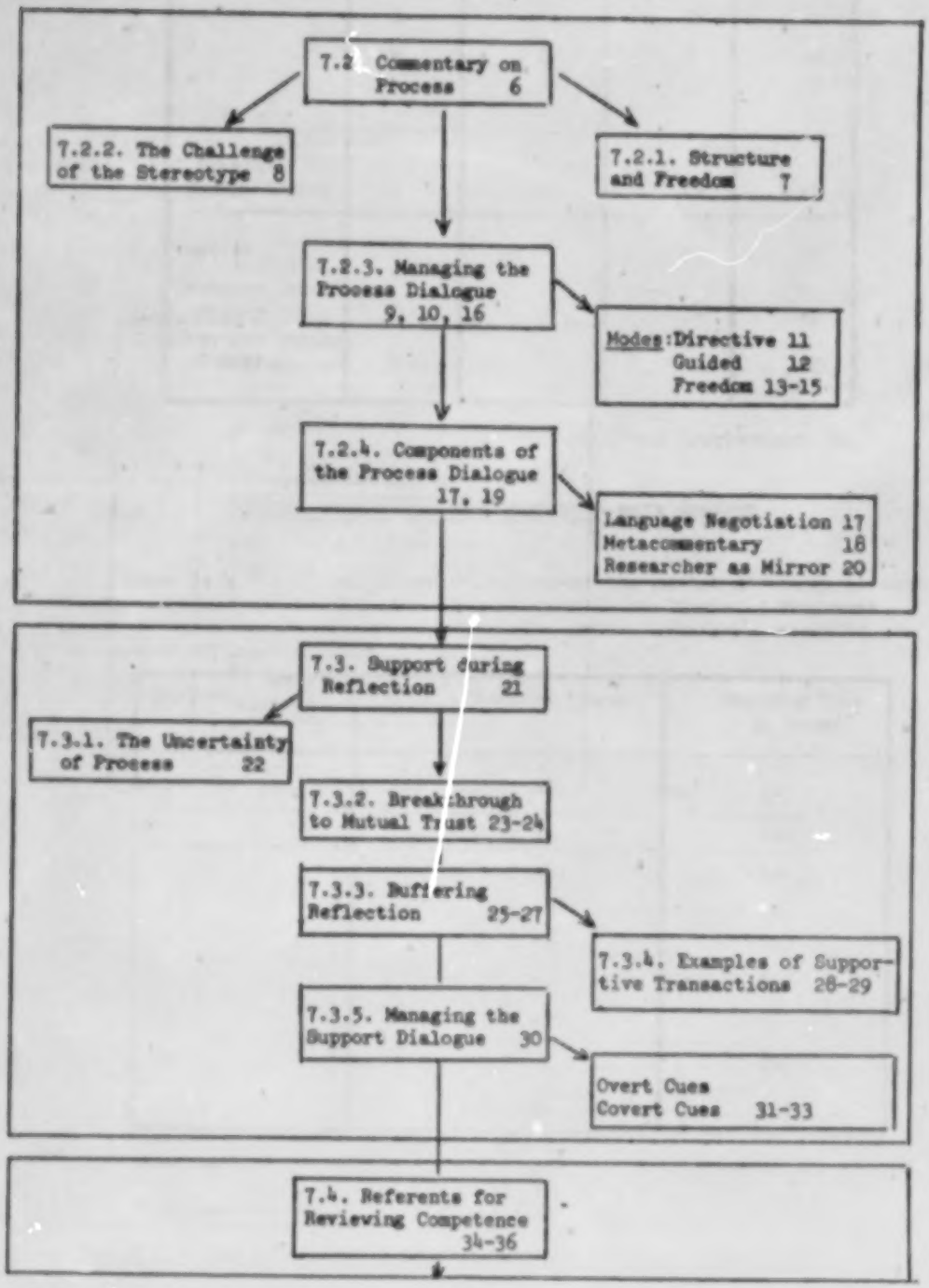
FLOW DIAGRAM OF SECTION 7



FLOW DIAGRAM OF SUB-SECTIONS 7.2, 7.3, 7.4. (Para.Nos.6 - 36)

ASIDE | MAIN THEME | ELABORATION

THE LEARNING CONVERSATION


7.2 Commentary on Process 6
7.2.2. The Challenge of the Stereotype 8
7.2.1. Structure and Freedom 7
7.2.3. Managing the Process Dialogue 9, 10, 16
Modes: Directive 11
Guided 12
Freedom 13-15
7.2.4. Components of the Process Dialogue 17, 19
Language Negotiation 17
Metacommentary 18
Researcher as Mirror 20
7.3. Support during Reflection 21
7.3.1. The Uncertainty of Process 22
7.3.2. Breakthrough to Mutual Trust 23-24
7.3.3. Buffering Reflection 25-27
7.3.4. Examples of Supportive Transactions 28-29
7.3.5. Managing the Support Dialogue 30
Overt Cues
Covert Cues 31-33
7.4. Referents for Reviewing Competence 34-36

These categories are not mutually exclusive. On the contrary, they inter-relate complexly and richly in the total pattern of the Learning Conversation. Articulating these boundaries of experience serves as scaffolding for describing the language of the Learning Conversation.

7.2. The Learning Conversation: Commentary on Process

One characteristic feature of the dialogue between learner and researcher was the alternation between externally offered feedback and internally generated feedback. Observing this feedback situation was vital for becoming aware of the learning-to-learn process in action. 6

7.2.1. Structure and Freedom

Students could not at first make use of the tools for generating their own feedback. The read records had to be interpreted and a model of the Reading-for-Learning process had to be made explicit by the researcher. Despite this guidance, students continued to request help with generating feedback. Whilst offering the students a continuing resource for interpreting records, commenting on strategy, evaluating outcomes and reviewing the overall process, the researcher at the same time encouraged them to achieve this independently. The structure and freedom dimension pre-occupied the researcher's attention throughout the action research study. 7

7.2.2. The Challenge of the Stereotype

The dilemma of structure and freedom can be summarised as follows. Is the student's view of the teacher as director, interpreter and evaluator an expected stereotype for that which should pertain in a learning situation, or is it in actual fact a relevant intrinsic part of the learning process? Does the traditional stereotype view cloud the reality of the learning-to-learn event? The middle/upper school moral prescription for learning with its strong socialising influence on pupils is based less on psychological inquiry and more on social and political commitment. Offering freedom for learning leaves many students in a naked helpless position. 8

7.2.3. Managing the Process Dialogue

It becomes obvious that offering the tools and modules is not enough for the learner to generate his own feedback and reflect on his process. The researcher has to engage the learner in a dialogue. In order to manage this dialogue, the researcher has to direct, guide and help the learner to discover a construing of his learning process. 9

Essentially, managing the conversation was seen as encouraging the student's own strivings to generate feedback and to reflect on process. This CATALYTIC function played itself out within a variety of modes of dialogue. These are summarised below:- 10

(i) Directive Mode: The Researcher as Director or Orthodox Teacher

The researcher controls the content (aim) and the process of the dialogue; the learner has little choice. This gives the learner an opportunity to enter the researcher's experiential world. 11

(ii) Guided Mode: The Researcher as Midwife

The researcher controls the content (aim) of the interaction, but the process is negotiable. The learner invents a strategy and is on his way towards autonomy. 12

(iii) Freedom Mode

(a) The Researcher as Casual Interviewer

In this 'laisses-faire' situation, either partner steers the conversation towards intellectual, emotional, or socially loaded interactions. It is difficult to assess 'who gains what', but such openness of interation becomes an intrinsic part of the dialogue. 13

7. TOWARDS A THEORY OF LEARNING CONVERSATION: A REVIEW OF THE RESEARCHER'S LEARNING EXPERIENCE

Para. Nos.

7.1. Introduction

In accord with the Centre's philosophy, the main purpose of the project at Loughborough was to provide students with a framework and context for exploring their Reading-for-Learning competence. Exploring competence depends on being able to reflect upon the processes through which skills play themselves out in action. The learner becomes more aware of how:- 1

(a) purposes are defined, refined, modified or discarded,

(b) strategies are implemented,

(c) outcomes are evaluated, and

(d) the learning-to-learn process is reviewed, so that on prospective Reading-for-Learning occasions, the range and effectiveness of his competence is enhanced.

The major tools for raising awareness of the learning process consisted of the Reading Recorder, the Flow Diagram Technique, and the Purpose Taxonomy. The Recorder displays the time-structure of reading behaviour in the form of a read record and the Flow Diagram Technique aims to make explicit the multi-dimensional relationships inherent in a text. The Purpose Taxonomy helps the learner to become more aware of reading purposes and to articulate these more precisely. A hierarchical 'Purpose-Strategy-Outcome-Review' Model (Paper 1) provides a framework within which these tools can be manipulated. The package of Reading-for-Learning Modules which provide the context for student exploration, offer instructions and suggestions to help the reader (learner) to:- 2

(a) interpret the read records,

(b) infer relationships between purpose-strategy and outcome,

(c) evaluate outcomes against purpose, and

(d) review the overall learning-to-learn process.

The researcher, acting as tutor, mediates between the learner and these awareness raising resources. This mediation is referred to as the Learning Conversation.

The purpose of this section is to review the researcher's learning experiences in her double role as participant in, and manager of, this Learning Conversation. In keeping with the Polanyi and Rogers view (1), such personal experiences are recognised as valid 'results' within the paradigm of a 'learning' experiment. The review is presented as a meta-commentary on Learning Conversations. This meta-commentary provides the foundation of a theory of learning-to-learn. Thus the beginnings for a systematic methodology in the pedagogy of learning-to-learn is articulated. 3

The review is based on two kinds of knowing (2); 'personal knowing', whereby the researcher's own construings of the events become the subjective referent, and 'inter-personal knowing', whereby the researcher compares her own construings with students' construings of events as the 'other' or external referent. 4

Three major areas of experience have been identified within the Learning Conversation. These are dealt with within the following categories:- 5

Commentary on Process,

Support during Reflection,

Referents for Reviewing Competence.

(b) The Researcher as Mentor

The researcher tries to offer freedom from within her own experience. The onus is on the learner to invent the content (aim) and the process. The researcher makes available the resource and develops counter arguments and propositions, leaving the learner to judge, and choose for himself. 14

(c) The Researcher as Madonna

The researcher helps the learner to creatively encounter his or her own experiences. The forgiving and protecting Madonna, shields the delicate impressionable learner from the sordid world of structure, so that he or she is free to play. In practice, this shield becomes an abstraction and relates to the Rogerian person-to-person 'empathy', 'unconditional positive regard' and 'congruence'. 15

The structure-freedom dimension of the dialogue is polymodal but the managing 'rules' remain largely intuitive. The key for effective management consists of encouraging the learner to reflect on his own process. 16

7.2.4. Components of the Process Dialogue

There were two basic levels in the process dialogue:-

(i) Language Negotiation

At one level a feedback and process language was being negotiated. The Read Record and the Flow Diagram provided the hard evidence of experience, and the hierarchical 'P-S-O-R' model, provided the conceptual framework. Together, the researcher and learner:- 17

(a) interpreted the Read Records,

(b) interpreted the master Flow Diagrams,

(c) invented Flow Diagrams in the situation,

(d) discussed the Purpose Taxonomy,

(e) invented new purposes,

(f) discussed the instructions presented in the Modules,

(g) discussed the design of the Modules,

(h) decided on appropriate routes through the Modules,

(i) evaluated the reading outcomes,

(j) reviewed the whole process.

Thus, Purpose, Strategy, Outcome and Review, became components in the feedback and process language.

(ii) A Meta-commentary on Language Negotiation

At another level a meta-commentary on the language negotiation took place. This was based on an awareness of generating one's own feedback and of inventing a model of process for interpreting and making use of this feedback. Thus a Reading-for-Learning Model and Self-generated Feedback become the components of this meta-commentary. The researcher acts as articulator of this meta-language, hence raising awareness of it, whilst providing the learner with the experiential tools for comprehending it. 18

A shift from dependence on the researcher, towards personal autonomy, with the learner setting his own purpose, interpreting his strategy, evaluating his reading outcome and reviewing the total process, occurred during the study. Ways in which the self-organised learner made use of the feedback, often differed from those offered by the researcher. This is interpreted as evidence for the internalisation of a process dialogue by the learner. 19

In helping the learner to generate his own process dialogue by constant meta-comment on process, the researcher's role becomes more that of a reflector or MIRROR. Supporting the learner in his exploration and review of the Reading-for-Learning process, posed another set of problems and opened up another area of the researcher's learning experiences. 20

7.3. The Learning Conversation: Support During Reflection

In order to achieve 'mirroring' it was quickly realised that managing the commentary on the process of learning was not enough. It became necessary to create conditions to help the learner explore and review the learning process. Supporting the learner is another dimension of mirroring. It emphasises the importance of identifying yet another aspect of experimenter social effects, made known through the work of Rosenthal. 21

7.3.1. The Uncertainty of Process

Exploring one's own learning process contains an element of uncertainty. Human beings experience tension when they become aware of the limits of their skill and understanding. Often, in attempting to change they get worse and this makes them over-anxious. Over-anxiety leads to withdrawal from exploring process, to the predictability and certainty of ritual modes of behaviour. The choice between process and stasis is that of the learner's. All the researcher can do is create the environment for exploration and monitor the effects so that conditions for support can be identified. 22

Some of the social effects identified in the action research study are described.

7.3.2. Breakthrough to Mutual Trust

It required much effort and time to convince the students that part of their participation in the action research study involved sharing their learning problems with the researcher. They often suspected that in encouraging discussion, the researcher was enticing them into a trap of some sort. In order to overcome suspicion, the researcher was compelled to allow the conversation to meander in almost any direction that pleased the student. Assessing the boundaries of this permissiveness in discussion, became a real dilemma. Was it over-indulgence or was it relevant to explore in depth the wide ranging intellectual emotional and social issues? The researcher's judgment was governed by an intuitive need to establish TRUST IN THE RELATIONSHIP. Students revealed that tutorial staff often spent a lot of time talking to them, but usually more in order to give advice, than to really listen. As the students recognised a commonality of purpose, namely that of observing process in order to explore and review their learning competence, a more open and democratic relationship gradually developed. 23

The importance of trust in the tutorial relationship is not a new concept. It forms one major prerequisite demanded by Zen masters. Trust became the foundation for the researcher's management of the learner while he or she explored the learning process. Trust helped the student through the agony and uncertainty of examining his own skills. It bridged the void between the anxiety of observing and changing and the safety of stasis or known routines of learning. Indirectly, trust in the relationship influenced the students' motivation to attend classes week after week, even when little or no apparent progress was being achieved. 24

7.3.3. Buffering Reflection

When the researcher was able to lower and stabilise the level of stress in the learning situation, the learner was enabled to remain observer of his process long enough to explore his own learning activities in depth. Offering security in the face of anxiety helped the learner to control stress, so that retreat into the safety and seclusion of known skills and understandings was sometimes prevented. The researcher acts as BUFFER, lowering awareness of stres and 25
enabling the learner to convert that energy locked in anxiety into creative tension. Thus supported, he continued in his strivings to explore and perfect the unknowable potential of his learning competence.

Buffering was achieved in a number of ways. Sometimes a student was shielded from public exposure. Errors made whilst learning were kept private and ignored by the researcher. The student was given the right not to record these in his record book or to delete them. Sometimes praise was given when it was not due. Occasionally, the researcher disclosed her own anxieties in 26
a similar situation. Sometimes tutorial staff were asked to be benevolent in marking assignments or in seminar situations, particularly when a student's behaviour showed evidence of active experimentation. Helping staff to identify such attempts at changing the learning process became a difficult and delicate aspect of the researcher's activities.

In these and other as yet unidentified ways, the researcher tried to provide buffering conditions, so that the learner continued to enjoy the experience of exploring and reviewing his skills. Emerging from observing his own process, 27
the student was able to use new meanings and employ a wider repertoire of learning skills in prospective situations.

7.3.4. Examples of Supportive Transactions

The following selected transcripts provide some evidence for the kinds of transactions taking place between student and researcher during support.

Researcher "I haven't done much to help you this time."

28

Student "Just to see you watching me work hard at it helps me a lot .....it helped me over the hump."

Researcher "I'm sorry I disagreed with you so strongly just now but my own experience in the same situation.....

Student "When you contradicted me I got completely messed up. I loathed you for breaking up my nice tidy view ..... but though I still don't agree with you, I've got a much better understanding."

Student "When you brought the idea of a purpose hierarchy to my attention, I couldn't see the relevance, I got scared, what had I let myself in for? I'd never really thought of levels of purpose in reading and when I did try it out my outcomes were always so bad! Now this purpose idea falls into place, before I saw it as a terrible and trivial thing!" 28

Researcher "What did I do to help then?"

Student "I don't really know, but I could feel your involvement, this was scary but lovely, so I just had a go!"

Student "I'd have given up this effort at improving my reading long ago, if I hadn't enjoyed so much talking to you about my biology essays and my problems with my girlfriend."

Student "I wouldn't have confessed this to anyone a few months ago - not even to myself I guess, but actually learning something scares me to death - what if I'm wrong, show I'm stupid, not as quick as the others, or miss the point altogether.....

Researcher "Look at these stupid things you did this morning! - you said you were going to survey that text very quickly and yet your read record shows one long read with all those hesitations and notes!"

Student "I know you don't really mean stupid! I could see you laughing as I was reading, I'd gone off the track again. But it was worth it! I feel at last that this sort of getting bogged down in a text, doesn't get me anywhere! Eureka! "

28

Student "Usually when I learn something from a book, I aim to do it as fast as possible, but these sessions have really slowed me down."

Researcher "Is that all? Where do we go from here? Do you want 'out'? "

Student "I don't know why, my brain says 'out', ...waste of time, but I enjoy talking about my read records with you, even though I'm getting worse! "

Thus, crucial and difficult learning experiences, have taken place under conditions of trust and buffering. Breakthrough to Trust and Buffering Reflection are two crucial conditions which supported the student during the exploration and review of the learning process. Becoming aware of the inner experiential state of the student whilst learning, helped to achieve these conditions. 29

7.3.5. Managing the Support Dialogue

The managing of 'give' and 'seek' interactions within the psycho-social pattern of events leading to support, depended on an awareness of and sensitivity to the changing 'inner state' of the learner. Management depended on the researcher's concern for the 'anxiety' revealed by the learner. 30

(i) Overt Cues

Whilst the learner read on the Recorder, overt cues were used for intervention in order to offer support. Unusual attitudinal poses; facial expressions such as frowning, yawning, twitching, smiling; noises such as scratching, sighing, underbreath mutterings; lengthy note-making sessions, or 'think' sessions; hesitations, backtracking and forward skipping; all cumulatively influenced the researcher's decision to intervene and help. 31

(ii) Covert Cues

Whilst participating in the feedback process, dialogue, the conversation was monitored for evidence of stress. Sometimes this was fairly easy. Student-initiated comments, such as :- 32

- I'll never get this right,
- I don't want to go on with this,
- I think I was better off before I started,
- I'm going on with this exercise all night even if it kills me,
- I hate flow diagrams,
- that viewing window is getting on my nerves,
- that record's wrong, I didn't do it that way,
- I'm slowing down,
- I spent ten times as long on my essay for X but I think I'll get an F,

- I'm fed up with reading for purposes,

- I've been watching myself all last week, talking, playing football, reading, - I'm just a robot, 32

gave fairly clear evidence of stress!

However, such comments as:-

- I thought this course would be like a Fast Reading Course,

- has this course really helped anyone?

- I think psychologists meddling in education need their own heads examined, 33

- will you come for a beer with me tonight?

- I'm fed up today!

- I'm having trouble with X,

- I'm longing to get out of college and get married,

- what can I do about these scars on my arm?

- all these education subjects are crapp,

open up wider areas of anxiety, which were not ignored. How (and if) they related to the stress of learning on the Course, could only be assessed by checking out the researcher's construings of the various 'give and seek' interactions with the learner.

7.4. The Learning Conversation: Referents for Reviewing Competence

This area of the researcher's learning experiences was the least explored. Having encouraged the learner to invent his own process language and to generate his own feedback, and having supported him through his learning, the researcher has to help him to solve an inevitable dilemma. Is the self-organised learner to rely solely on his own reviewing in order to assess his 34 competency? If he chooses to do so, how will he ever know how skilled he really is? Is personal knowing enough? The onus is on the learner to judge if and when to extend his experiential world, through inter-personal and group sharing. But how can two or more learners begin to share their worlds?

Just talking often leads to dead ends, misunderstandings and hostile confrontations. The best one can hope for is compromise or a status quo. 35 Exchanging Read Records, Flow Diagrams, purposes, and review procedures, open up a methodology that can overcome these difficulties. Currently, this is being investigated at the Centre.

In progressing through the sequence of personal, inter-personal and group review the learner can relate his private understanding to a wider field of public experience. The onus, however, must be on the learner to judge the 36 relevancy, for him, of areas of public experience. He then selects individuals or groups who offer the knowledge. By standing firmly within his personal understanding and using 'chosen others' as referent, a wider repertoire of experience becomes available to him.

7.5. Some Failures

Within the Learning Conversation, the researcher's ability to participate in and manage each dialogue often proved difficult. The learner and researcher walked along a tightrope. They discovered many unexpected and unknown hazards. One faulty step by either meant that the learner quickly retreated into the 37 security of known skills, and the researcher lost the opportunity to observe and to learn from the interaction.

Mistimed or over-frequent dialogue initiation, too directive or permissive management, attempts at too rapid closure of the dialogue, and inability to predict the learner's needs,are only some instances of the researcher's inadequacies. 38

7.6. A Comment on Structure and Freedom

The apparent dialectic between offering a context for freedom to explore and learn and of making available the structure of other 'knowings' was nullified, as a result of this action study. As a result of the researcher's learning experiences this antithesis was much more apparent than real. To the extent to which structure is sought by the learner he exercises freedom and the encouragement of freedom by the researcher increases the learner's wide-ranging net of experience. This experience is subsequently used by the learner as a personal referent for exercising choice. 39

7.7. Implications

The study highlights the inadequacies of existing experimental paradigms for human learning. The orthodox view of the experimenter as controller of the experiment is inadequate. The social influences demonstrated by Rosenthal (3) must be taken into account. The evidence reported points towards a new experimental paradigm for human learning studies. The experimenter (researcher) and the learner can and must act as measuring instruments within the learning situation. This does not involve a return to the softness of the introspective approach. Tools and procedures make it possible for the researcher and learner to monitor their changing inner states. This procedure becomes the Learning Conversation. 40

A researcher's learning experience as participant in the "Learning Conversation" is reviewed. This review is offered as a meta-commentary, out of which a model of the Learning Conversation is developed. This model provides the foundation upon which a systematic methodology for learning-to-learn can be built. 41

The focus of the learning conversation is the reflection of process; the learner reflects on his learning; the researcher monitors this and reflects on her management of the conversation. The researcher's function can be described as that of 'mirroring' the process to the learner. Mirroring leads to heightened awareness and this enables the learner to explore her skill, so that she moves towards greater competency and creativity. 42

The language of mirroring is trimorphic, generating three forms of dialogue. One sample of the conversation may contain components of each dialogue. The first form of language is a commentary on the process of learning. The learner invents his construings of the process and generates his own feedback. Given tools for exploring process he is offered a hierarchical 'Purpose-Strategy-Outcome-Review' Model as a referent against which to validate his construings. The 'process' dialogue is polymodal, ranging from the directive mode through guided to discovery. 43
The management rules for moving between modes remain largely intuitive, but relate to a 'catalytic' view of mirroring. The second form of dialogue deals with support. Several kinds of psycho-social events contribute to supporting the learner during the uncertainties and stress of exploring and reviewing learning. 'Trust in the relationship' and 'buffering process' involve wide-ranging psycho-social interactions. Again, the management rules remain largely intuitive but relate to being sensitive to the changing inner state of the learner. The third form of the dialogue deals with referents for reviewing competence. This area of the researcher's learning experience was the least explored. Techniques and procedures were partially developed for extending the referent from individual to interpersonal and group sharing of experience. The researcher helps the learner in choosing appropriate referent.

In managing the learning conversation the articulator (in this case the researcher) makes available the resource and controls the three forms of dialogue. As the learner moves towards self-organisation he begins to articulate his own dialogue and to control his own learning potential. 44

The implication of this theory of Learning Conversation in Education can be far reaching. It offers a fresh approach to the pedagogy of learning. The results indicate that learning skill can be enhanced not just 10 - 15% but by 300 - 500% and not for a selected few but for each and every one. 45

8. DISCUSSION

Within the Training Programme, the results showed that for each particular purpose explored, the students in Study One and Two had learnt to review and change their strategies of reading and to improve their performance. They had learnt to explore for themselves the optimal (most economic and most efficient) relationship between purpose, strategy and outcome, using reading texts which were largely unfamiliar to them. The kinds of relationship identified tended to be idiosyncratic but certain standard characteristics were common to the group. On the whole, the easier the purpose and the text, the simpler the reading strategy (in terms of number and kinds of read tactics), for an effective outcome. The corollary was also true, the more difficult the purpose and the text, the more elaborate the reading strategy, for an effective outcome. "Easy" and "difficult" were subjective decisions, and it was not always necessarily the case that the same purpose and text was either "easy" or "difficult" for all students. Most students admitted that they could do with more practice during the training period, on wider ranging texts, of their own choice. Students mentioned that they needed more time to explore the flow diagram technique. Students appeared unanimous in their opinion that the significant components of the training, which had contributed to their improvement in academic performance were:-

(i) learning to select the main ideas in a text (Module 5),

(ii) learning to describe the meaning structure of texts (Flow diagram technique),

(iii) exploring the relationship between reading strategies, purposes and outcomes within each Module,

(iv) opportunities to discuss various problems with the researcher and with each other,

(v) some students mentioned that the exercises in recall and recognition of specific facts and terms (Modules 1 and 2) had been useful for revision, and for essay preparation.

In comparing the Pre- and Post-Tests in Study One, the experimental group radically changed their reading strategies and radically improved their performance, both in the acquisition of facts and the identification and retention of main statements after training. Their strategies in the Post-Test were more elaborate in that a greater variety of read tactics were used and as a consequence the total reading time increased.

The search read tactic (Table 6) was used by all students as part of their total strategy in the Post-Test. This type of tactic had only been used by two students in the Pre-Test and in each case this tactic was only partially exercised. Similarly only one of the nine control subjects showed evidence of using "search read" tactics, in the test. In other words, evidence of search within a text before training was exceptional. This confirms evidence put forward by Perry (1), in the reading tests developed for Freshmen at Harvard. Post-training strategies were also characterised by longer non-reading periods, either intervening between the various read tactics or terminating the reading strategy. Students claimed that these periods had consisted of 'thinking', 'memorising', 'checking' and 'planning'

sessions. In the Pre-Test reading strategies, non-reading periods were on the whole absent. In the non-reading tactics which were recorded, students claimed they had been 'mostly memorising' ! Most students said, that given more practice in the training sessions, they believed that they could have speeded up their Post-Test reading strategies and maintained the improvement in their score performance. They suggested that this would not have been at the expense of neglecting newly developed tactics, but that they would have 'speeded up' the whole reading strategy. One can infer from this, that the same kind of cognitive processes would have been negotiated but in 'fast' rather than 'slow motion'. There is no evidence available to show what effect this would have had on the reading strategies. It was unfortunate that the time and duration of the Loughborough Study prevented any further empirical evaluation of this student initiated expectation. Logically, such a prediction is compatible with the three stages of skill acquisition, as defined by Fitts (2). In the "cognitive" and "fixation" stages, the skill is intellectualised, practised and incorporated into a hierarchically organised sequence. The "autonomous" phase is characterised by increasing speed of performance and conscious control is relinquished. Recognising the hierarchically organised servo-controlled T.O.T.E. system of behaviour put forward by Miller Galanter and Pribram (3) the skill is only reviewed or brought into conscious control when difficulties are encountered. The process of learning to explore, review and invent new ways of Reading-for-Learning takes time, requires support and involves building up an increasing repertoire of skills within the hierarchically organised scheme which controls behaviour.

Students' attitudes and habits of reading as measured by the Questionnaire indicated that as a result of training they:-

(i) questioned what they read rather than accepting what is in the book;

(ii) planned their reading;

(iii) looked for organisation in the text;

(iv) liked reading-for-learning much more after they had taken part in the course;

(v) made fewer notes.

Study One stated that when the improvement in reading performance is related to academic performance, all volunteer students had improved in their two main college subjects. The improvement is quite startling. Two of the volunteer students were exceptional in that they were the only students to be awarded 'A' Grades in Education and five out of the nine volunteers achieved Grade 'A' for Physical Education Theory. There is a high correlation between improvement in the Reading Course and improvement in general college performance. This is shown in Figure 11. The control group showed no significant change in academic performance. The study was fairly long-term and this result is somewhat surprising, since reports of training in the remedial reading area have recorded changes (improvement) in the control group, in the time. This improvement has been attributed to their learning experiences at school.

Such observations relate to children in the early and middle school years and there may well be several important explanations why students have not similarly taken advantage of their college learning experiences. Much practised skills become deeply embedded in the unconscious. Left alone in the college situation, students may not find it very easy to break long-established habits and to explore new ways of Reading-for-Learning. The habits of children may not be as firmly 'fixed'. Also, younger children have one important advantage. Much of our efforts in bringing about changes in the educational curriculum to emphasise 'Learning-to-Learn' have concentrated on the primary school years. Children, particularly those in progressive primary schools, may be offered the kind of social and intellectual support they need for growth and change. Students show that they also need support and it is our contention that an important contribution to the success of the Training Programme was the social, emotional and intellectual support offered by the researcher.

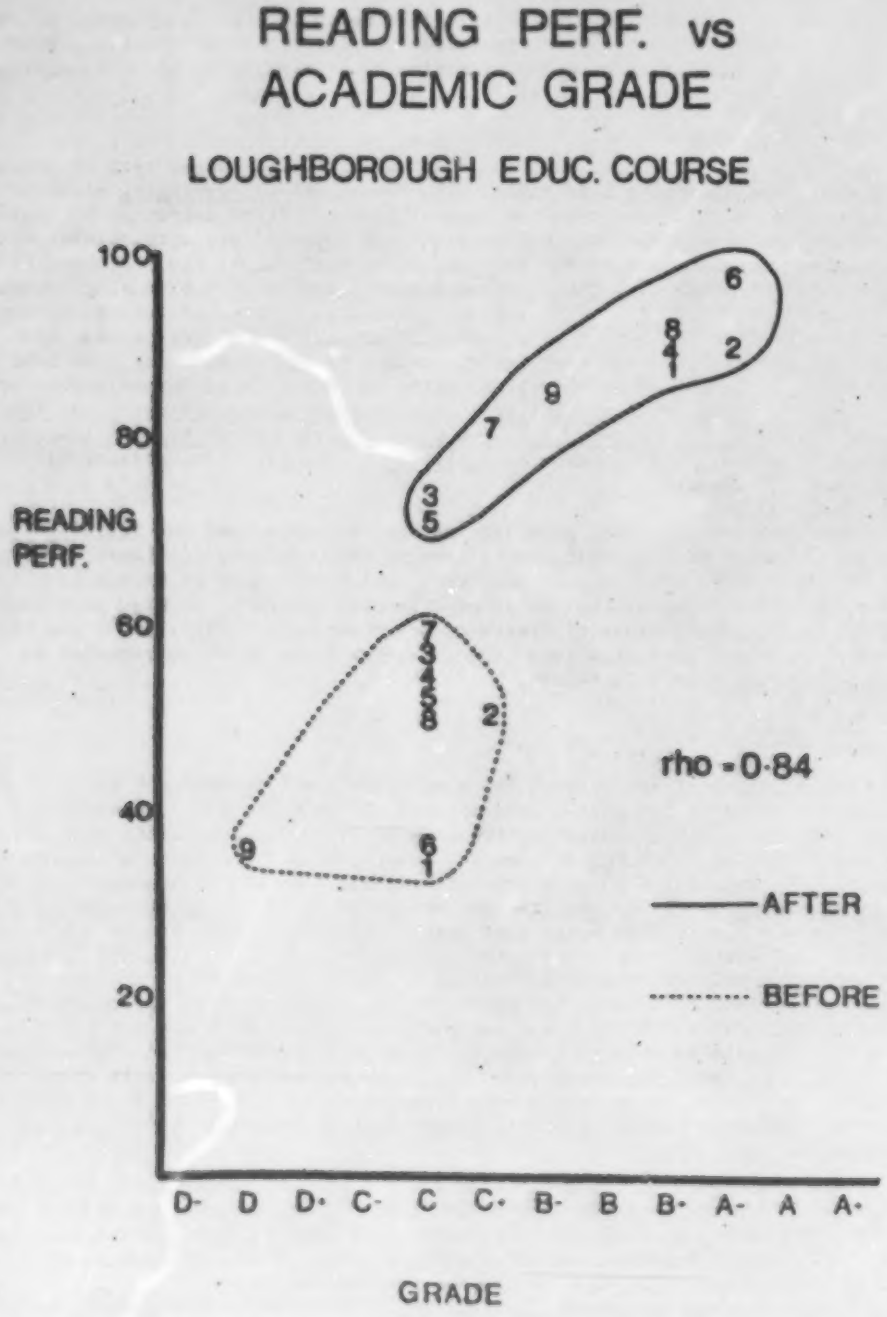


Fig.11 THE RELATIONSHIP BETWEEN IMPROVEMENT IN READING PERFORMANCE ON THE COURSE AND ACADEMIC GRADE

A number of control group subjects felt resentful that they could not embark on a Training Programme. This emphasises the inadequacy of classical experimental design, in a real action research situation. It highlights the ethical issue of 'using' humans for the sake of maintaining a tidy design.

As a result of training, students developed their reading competence and achieved a level of personal autonomy in reading, which became part of a more self-organised 'learning life style' with consequent wider-ranging effects. However, the results have posed a crucial issue. It is necessary to consider to what extent the short and long term changes reported are attributable to the controlled variables within the training. In particular, the tools and the model built into the Modules. The unorthodox relaxation of control during training, particularly in Study Two, which was an inevitable outcome of increasing emphasis on self-organisation, throws up a number of ambiguities of measurement and difficulties in a hard and fast interpretation of the data. One must consider the 'social effects' of Rosenthal and hitherto unidentified 'experimenter effects'. There is clearly a need to identify a process language, which describes the nature of the psycho-social interaction taking place between researcher and learner. An attempt to achieve this is made in Section 7. The idea of a science of 'Learning Conversation" emerges.

The Loughborough Study provides positive evidence that the Training Programme was effective in helping students to develop their Reading-for-Learning competency. The evidence would also suggest that they have become more self-organised learners. The study highlighted weaknesses in experimental design. It also gave impetus for further investigations of 'Learning Conversations'. This paved the way to further empirical investigations and interpretations which we reported in Papers 3, 4 and 5 of this report.

9. IMPLICATIONS

There is a conflict between the aims of this action research and the orthodox methods of research decign. Rigid control of variables and deference to a control group offer statistical and objective advantages. This conflicts with offering opportunities for self-organisation and inventiveness. Freedom of choice in training was considered to be a crucial variable account for academic improvement. In Loughborough Study One this freedom was restricted. Loughborough Study Two, served as a pilot attempt to provide greater freedom, within the fairly orthodox experimental set up. In subsequent ongoing studies, Gipsy Hill and Brooklands, subjects were offered increasing control of their own learning experiences. The Modules were less structured and ultimately completely changed in character, allowing subjects to pursue their own purposes and choose their own texts. The researcher's role becomes increasingly managerial, offering a conceptual framework and helping students to invent their own tools and techniques, with which to explore and examine their Reading-for-Learning skills. Social and intellectual support, during the change process, became another important aspect of this management.

With reference to the hypotheses set out in the Introduction, evidence from this study confirms the expectation that helping students to improve their Reading-for-Learning skills has increased their capacity for self-organisation. The model, tools, teaching approach, evaluation procedures, needed to be refined, elaborated and modified, as more freedom for learning was offered in training. This became increasingly clear in Study Two. Both Studies emphasised to varying degrees, that the role of the researcher and of the learner need to be reconsidered, within a paradigm of research, designed to help students to Learn-to-Learn.

A humanistic phenomenological approach in action research, which encourages the concept of freedom to learn, poses fundamental problems of experimental design and measurement. This issue became the main focus of the ongoing research project, and is taken up as a central theme in the subsequent papers, which form part of this research report.

CENTRE for the STUDY of
HUMAN LEARNING

Course Notes

PROBLEMS EXPERIENCED BY TRAINEE TEACHERS IN USING READING FOR LEARNING.

A recent informal survey among first and third-year students at Loughborough College of Education showed that many of them experience considerable difficulty in using reading effectively as part of their battery of learning skills. Many of them complain that not being able to read was a considerable handicap in the course; others seemed to have compensated for their difficulties by relying on the formal instruction and informal discussion with other students. The following summarises some of the difficulties that were revealed by the survey (we are preparing a more colloquial, i.e. direct quotation form of this list).

A CLASSIFIED LIST OF REASONS GIVEN BY LOUGHBOROUGH COLLEGE OF EDUCATION STUDENTS, FOR DIFFICULTIES THEY HAVE WITH USING READING AS A LEARNING SKILL.

1. SELECTION

Conflicting priorities for reading.

Pressure of other assignments.

Have never been taught how to use a library, therefore unable to select right books.

Gets side-tracked into reading irrelevant texts.

Difficult to connect suggested reading to the rest of the course.

Never review accessing skills, tend to handle all books in same way, therefore unable to select relevant parts effectively.

2. STRUCTURE AND ORGANISATION OF MATERIAL

Forced to use too difficult material.

Doesn't like large chapters without sections.

Inadequate summaries in texts.

Difficulty in pulling out features (major and minor).

Despair at pages full of words.

Complicated writing, waffly,

Inadequate knowledge of references.

3. TERMINOLOGY

Irritated by excessive jargon.

New terminology.

Differing terminology in same subject.

Reading words wrongly.

4. PROCESS

Learn better if reading accompanied by discussion - student or staff.

More reading leads to less understanding.

Requires rest after periods of, from 15-45 minutes.

Slow at reading.

Needing to re-read a number of times.

Have difficulty in reading aloud.

Reads too quickly.

Nothing going in - lack of comprehension.

Get too engrossed and cannot put book down.

5. OUTPUT

Slow in remembering.

Cannot bring material to mind when wanted.

Forget detailed information such as dates, names, places, etc.

6. BOREDOM

Bored, tired, sleepy.

Difficult to concentrate.

Hard to get interested, or to get started, in the mood.

Disinterest in reading for uninteresting information.

7. DISTRACTION

Finding time to read.

Bar, women, music, family.

People talk to me.

Can't read in silence.

Distraction, noise whilst reading.

8. PHYSIOLOGICAL & PHYSICAL

Tired eyes.

Poor lighting.

9. HANG-UPS

Couldn't be bothered to have an eye test, don't like glasses.

Lack of concern about poor lighting.

Hang-ups about seating positions, got to smoke, got to scratch my head.

Unable to control own biases and prejudices, e.g. Joyce is too difficult, 'Scientific American' is too stereotyped, Watson's 'genetic code' betrays scientific thinking. Norman Mailer is fortune seeking and opportunist. The Observer Colour Supplement is only for the masses. Mysticism in Zen the Noh drama and Haiku poetry is unscientific. Elliot's, The Waste Land is contrived and artificial, like most modern poetry.

10. PASSIVITY

Often inadequately defined purposes for reading.

Allow the author to take over.

Provisional plans seldom followed through, and

Seldom reviewed afterwards.

Never think about <u>how</u> to retrieve information from a book.

11. INFLEXIBILITY

Only vaguely aware of reading method.

Cannot adapt method to text and purpose.

Usually go through set routine of using a library.

Tend to read any book or article from beginning to end.

12. UNAWARE OF THE RANGE OF READING PURPOSES

Unable to articulate a specific purpose for reading.

Unable to distinguish between formal and informal reading.

Equate reading for pleasure with novels and reading for learning with text books.

Usual text-book reading to do with summarising.

THE MODULES

1. Design of the Modules

The design of the Training Modules was based on the assumption that learners depend upon a conceptual framework and tools for explaining their competence. Within this framework, and with the tools, they can define their learning purposes, develop skills related to these purposes and review their learning performance. They can also become progressively more efficient at doing this.

The Training Modules consist of a programme, presented on continuous stationery, and the Reading Recorder. The programme presents:-

i) Instructions;

ii) Definitions of Purposes;

iii) The Texts;

iv) The Tests;

v) Guidance for the learner to diagnose his performance.

The Reading Recorder produces a record of reading behaviour (strategy and tactics). The learner reviews his strategy in relation to the reading purpose.

In addition, the Modules are organised so that the learner can extensively practise his developing learning skills. This opportunity for the learner to review his own performance and to decide on both the need and nature of additional practice, is seen as important for maximising learner performance and encouraging change in capacity for self-organised learning. The Module design is summarised in Fig.1.

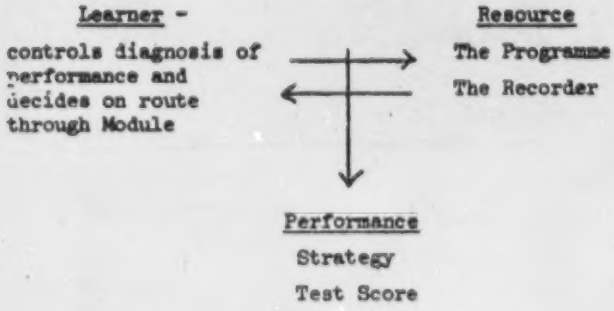


Fig.1 THE DESIGN OF THE MODULES

The earlier research studies provided an empirical foundation for defining the operational link between Reading-to-Learn purposes and the skills required to achieve these. Strategies and tactics of reading for specifically identified learning outcomes formed the basis of levels of instruction within the Modules. On the basis of this earlier research work, it is hypothesised that tasks and the corresponding skills necessary to achieve these tasks are hierarchially organised. To perform a task a learner must have subordinate skills, and to perform a super-ordinate task in the hierarchy the learner may need to be guided by means of relevant instruction. Attaining the super-ordinate task depends on the recall and selection of subordinate skills and on instruction. At any level of the hierarchy, a learner's capability of success depends on his store of skills and on his ability to make use of instruction. The Modules attempt to guide the learner to identify in explicit terms the nature of his success or otherwise as well as to provide him with instructions to learn a new skill, which he can then consciously manipulate.

2. Contents of each Module

The Modules are made up of a number of parts or sub-modules. Each sub-module is a learning exercise in itself and contains:-

(a) A description of the purpose.

(b) Learner controlled assessment of his entering behaviour.

(c) Levels of instruction to meet individual needs.

(d) A Text.

(e) A Test.

(f) Learner controlled evaluation of his performance.

At each level of instruction the learner is encouraged to identify:-

1) The elements in the stimulus situation, the purpose, the text and the level of instruction.

2) The elements in the response situation, the reading record, showing the reader's strategy and tactics, and scores in the test.

At each level of instruction the learner is encouraged to -

1) recall previously learnt skills,

2) make use of the instruction in order to learn a super-ordinate skill.

Modules 1 & 2

Aim to identify the left to right linear sequence of word, phrase and sentence order as meaning units.

Module 1

Sub-Module B. Task

Reading in order to respond to objective test (multiple choice) demanding recognition of small meaning units.

Capability

To recognise during reading and subsequently recognise small meaning units in a text.

Sub-Module Bi. The same as above with supplementary cueing of meaning units.

" " Bia. Further practice with supplementary cueing of meaning units on a different text.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy on a different text.

Sub-Module R. Task

Reading in order to respond to objective tests demanding recognition of larger meaning units (multiple choice).

Capability

To recognise during reading and subsequently recognise larger meaning units in a text.

Sub-Module Ri as Bi - larger meaning units

" " Ria as Bia " " "

" " Rii as Bii " " "

" " Riib as Biib " " "

Module 2

Sub-Module B Task

Reading in order to respond to objective tests demanding recall of small meaning units in a form close to the original.

Capability

To recognise during reading and subsequently recall small meaning units in a text.

" " Bi. The same as above with supplementary cueing of meaning units.

" " Bia. Further practice with supplementary cueing of meaning units on a different text.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy in relation to the task.

" " R. Task

Reading in order to respond to objective tests demanding recall of larger meaning units in a translated form (in a person's own words).

Capability

To recognise during reading and subsequently recall in translated form large meaning units in a text.

" " Ri as Bi - larger meaning units

" " Ria as Bia " " "

" " Rii as Bii " " "

" " Riib as Biib " " "

Modules 3, 4, 5 & 6

Module 3

Sub-Module B. Task

Reading in order to recognise specific facts and terms - the lowest level of a knowledge hierarchy, on a text with numerous specifics.

Capability

To recognise during reading the relationships between different levels of meaning units, particularly for the selection of specifics.

Sub-Module Bi. The same as above with supplementary cueing of levels of meaning units.

" " Bia. Further practice with supplementary cueing of levels of meaning units on a different text.

Sub-Module Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy on a different text.

" " R. Task

Reading in order to recognise specific facts and terms - the lowest level of a knowledge hierarchy on a text with few specifics.

Capability

To recognise during reading the relationships between different levels of meaning units, particularly for the selection of specifics.

" " Ri. as Bi - less specifics

" " Ria. as Bia " "

" " Rii. as Bii " "

" " Riib. as Biib " "

Module 4

Sub-Module B. Task

Reading to recognise specific facts and terms - the lowest level of the knowledge hierarchy on a text with numerous specifics and to subsequently select and recall specifics.

Capability

To recognise during reading the relationship between different levels of meaning units, particularly for the selection and recall of specifics.

Sub-Module Bi. The same as above with supplementary cueing of levels of meaning units and guide to note making and note consultation (i.e. grouping of specifics into a lower order concept).

" " Bia. Further practice with supplementary cueing of levels of meaning units, on a different text.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy on a different text.

" " R. Task

Reading in order to recognise the specific facts and terms, in a text with few specifics and to subsequently select and recall these specifics.

Capability

To recognise during reading the relationship between different levels of meaning units, particularly for the selection and recall of specifics.

" " Ri. as Bi - less specifics

" " Ria. as Bia " "

" " Rii. as Bii " "

" " Riib. as Biib " "

Module 5

Sub-Module B. Task

Reading in order to recognise main points - the highest level in a knowledge hierarchy, at paragraph level.

Capability

To recognise during reading the relationship between different levels of meaning units or sentences, particularly for the selection of the main point of a paragraph.

" " Bi. The same as above with supplementary cueing of levels of meaning units within the knowledge hierarchy (Bloom analysis of knowledge), (flow diagram).

" " Bia. Further practice with supplementary cueing of levels of meaning units on paragraphs of a different text.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy on paragraphs of a different text.

" " R. Task

Reading in order to recognise main points - the highest level in a knowledge hierarchy, at sentence level.

Capability

To recognise during reading the relationship between different levels of meaning units or phrases and clauses, particularly for the selection of the main clause (or point) in a sentence.

" " Ri. as Bi - at the sentence level (syntactic & semantic analysis of sentence) (flow diagram)

" " Ria. as Bia " " "

" " Rii. as Bii " " "

" " Riib. as Biib " " "

" " G. Task

Reading in order to recognise main points - the highest level in a knowledge hierarchy, at chapter level.

Capability

To recognise during reading the relationship between different levels of meaning units or sentences, particularly for the selection of the main points within a chapter.

" " Gi. as Ri - at the chapter level (matrix), (flow diagram)

" " Gia. as Ria " " "

" " Gii. as Rii " " "

" " Giib. as Riib " " "

Module 6

Sub-Module B. Task

Reading in order to recognise and recall main points at the paragraph and chapter level, i.e. to write a summary of a text.

Sub-Module B. Capability

To recognise during reading the relationship between different levels of meaning units, particularly for the selection of main points within and between paragraphs and subsequently to recall in translated form the main points and the semantic relationship between them.

" " Bi. The same as above with supplementary cueing of levels of meaning units within the knowledge hierarchy and guide to note making and note consultation (Bloom analysis, paragraph flow diagram), (matrix of paragraphs, chapter flow diagram).

" " Bia. Further practice with supplementary cueing and guide to notes on a different text.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy on a different text.

" " R. Task and Capability as for B.

The text is different in style and content to facilitate transfer of capability.

" " Ri.. as Bi

" " Ria. as Bia

" " Rii. as Bii

" " Riib. as Biib.

Modules 7, 8 & 9

Aim to identify the overall semantic organisation of a text.

Module 7

Sub-Module B. Task

Reading to recognise, select and recall the overall semantic organisation of a text.

Capability

To recognise during reading the relationship between the arguments put forward by the author, e.g.

cause and effect
OR compare and contrast
" trends in time or logic
" objectives and elaborations of objectives
" development of a theory.

" " Bi. The same as above with supplementary cueing of types of arguments in the selected text and of meaning units which relate to these arguments.

" " Bia. Further practice with supplementary cueing on a different text with similar arguments.

" " Bii. To optimise the reading strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy, on a different text with similar arguments.

Sub-Module R. Task and Capability as for B. The text is different in style and in argument to facilitate transfer of capability.

" " Ri. as Bi.

" " Ria. as Bia.

" " Rii. as Bii.

" " Riib. as Biib.

Module 8

Sub-Module B. Task

Reading a number of texts in order to integrate these into a new synthesis - to write an essay.

Capability

To recognise during reading the main points as the overall arguments in a text and to be aware of the limits of that knowledge structure in relation to other sources of knowledge (other texts). To select the relevant knowledge from each text and integrate into a new synthesis.

" " Bi. The same as above with supplementary cueing of main points, arguments and limits of knowledge of the text. Guide to the integration of texts for the purpose of extrapolating a new synthesis.

" " Bia. Further practice with supplementary cueing on another group of texts.

" " Bii. To optimise the reading strategy and writing strategy in relation to the task.

" " Biib. Further practice to optimise the reading strategy and writing strategy in relation to the task.

Module 9

Sub-Module B. Task

Reading to evaluate the strength and weakness of arguments intrinsically in one text and extrinsically between a number of texts.

Capability

To be critical during reading of the author's meaning and overall semantic organisation by comparing generated meanings with self-experience and beliefs.

" " Bi. The same as above with supplementary cueing of criticism of arguments.

" " Bia. Further practice with supplementary cueing on another group of texts.

" " Bii. To optimise the reading strategy and writing strategy in relation to the task.

" " Biib. Further practice to optimise the reading and writing strategy in relation to the task.

Module 10

Aim: Problem finding and solving.

Task

To formulate the task and to select the text(s).

Capability

To recall and select from the hierarchical set of tasks and corresponding capabilities, the appropriate set, for the purpose of accomplishing a self-initiated objective. To execute a reading strategy which is optimal to the task.

3. The Structure of each Module

The network of routes within the Module is shown in Fig.2.

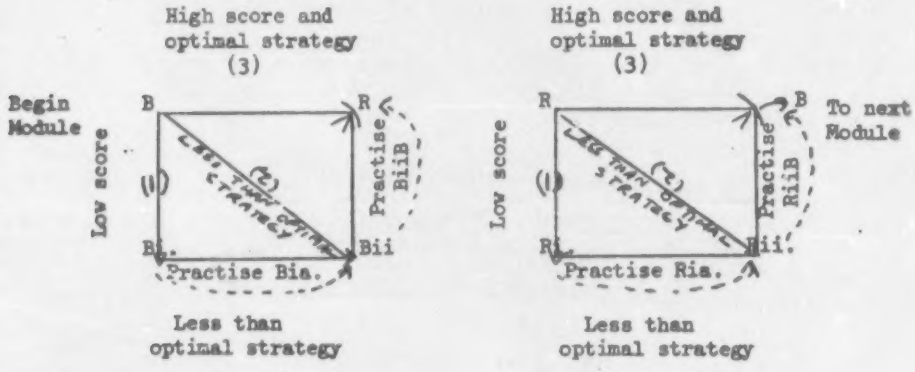


Fig.2 THE NETWORK OF ROUTINES WITHIN A MODULE

Subscript: B = Sub-Module concentrating on smaller chunks of meaning units on semantically simple texts.

R = Sub-Module concentrating on larger chunks of meaning units on semantically more complex texts.

(i) Sub-Module giving detailed level of instruction in relation to the task.

(ii) Sub-Module giving detailed level of instruction relating to economy of effort (tactics, speed).

(a) Sub-Module giving extra practice

(b) Sub-Module giving extra practice.

Possible routes through the Module

(1) If low score obtained on Sub-Module B

(2) If less than optimal strategy has been used.

(3) If a high score and an optimal strategy has been used.

APPENDIX 3

READING QUESTIONNAIRE

INTRODUCTION

There are two main aims of this questionnaire:-

1. To focus your attention on your individual reading skills and styles of reading to learn, and to start you thinking about a variety of reading skills and purposes.

2. For us to develop a self report measure of the particular strengths and weaknesses of readers both before and after discussions and training.

Details of how to complete the questionnaire are given below:-

This information will be treated as strictly confidential and will not be communicated to anyone outside the Reading Project.

INSTRUCTIONS:

1. Read the statement and decide which of the responses: "always", "often", "sometimes", "occasionally" or "never" would make the statement most applicable to you. Circle the number that applies.

2. If none of the responses are applicable or if you have any difficulty in understanding a statement then cross it out.

3. When a statement does not refer to a specific type of reading material take if to refer to material related to the course that you are on.

4. Answer honestly - do not answer as you think you ought to read but how you actually do.

Centre for the Study of Human Learning,
Brunel University,
UXBRIDGE.

NAME	always (1)	often (2)	sometimes (3)	occasionally (4)	never (5)
1 I do not make notes when reading, but underline headings, sentences etc.	1	2	3	4	5
2 I find reading difficult.	1	2	3	4	5
3 My method or 'patterns' of reading changes according to the purpose of the reading.	1	2	3	4	5
4 When I read, I am aware that I adopt a particular 'strategy of reading.'	1	2	3	4	5
5 Without knowing why, I feel anxious or worried when reading a textbook.	1	2	3	4	5
6 I read in order to find new ideas.	1	2	3	4	5
7 I tend to read in a rather disorganised way.	1	2	3	4	5
8 I take notes when reading a book.	1	2	3	4	5
9 I copy down verbatim what I consider to be significant portions of the text.	1	2	3	4	5
10 I become bored with 'factual' texts and prefer to read theoretical writings on a topic.	1	2	3	4	5
11 When reading a book and taking notes, I concentrate on recording a summary of the facts.	1	2	3	4	5
12 When I read a book, it is not so much factual information as understanding of theories and concepts that I'm trying to achieve.	1	2	3	4	5

	always (1)	often (2)	sometimes (3)	occasionally (4)	never (5)
13 I find it difficult to read and understand long sentences.	1	2	3	4	5
14 I use a different reading method or pattern according to whether I'm revising for an exam or reading for an essay.	1	2	3	4	5
15 I plan my reading.	1	2	3	4	5
16 I read slowly and carefully regardless of whether I'm revising for an exam, learning facts for a test or reading for an essay.	1	2	3	4	5
17 I make fairly detailed summaries of most material that I read.	1	2	3	4	5
18 I adopt a different reading method for different tasks, i.e. I have a different reading strategy for essays, objective tests, exams, seminars etc.	1	2	3	4	5
19 I think my reading is efficient.	1	2	3	4	5
20 When I read, I am aware that for certain tasks (e.g. compiling an essay) I adopt a definite 'strategy of reading.'	1	2	3	4	5
21 I have a different reading method or pattern according to whether I'm reading (learning) for a test or reading for an essay.	1	2	3	4	5
22 I enjoy reading.	1	2	3	4	5
23 I prefer to read 'factual' texts rather than theoretical texts.	1	2	3	4	5

	always (1)	often (2)	sometimes (3)	occasionally (4)	never (5)
24 When reading a book and taking notes, I concentrate on recording a summary of theoretical and conceptual issues.	1	2	3	4	5
25 When reading, I am aware that I say the words silently to myself ('sub-vocalising' - the words are silently mouthed).	1	2	3	4	5
26 I read an assignment slowly and carefully from beginning to end without reading it through again.	1	2	3	4	5
27 I find that reading requires great perseverance.	1	2	3	4	5
28 I dislike reading.	1	2	3	4	5
29 I read more slowly and carefully when I'm learning facts	1	2	3	4	5
30 I use the same 'reading strategy' regardless of the purpose for which I am reading.	1	2	3	4	5
31 I find it difficult to read and understand sentences with many subordinate clauses	1	2	3	4	5
32 I feel that if I skim or read too rapidly my comprehension will drop.	1	2	3	4	5
33 I feel it is almost 'sinful' to skip a passage in a text I am reading.	1	2	3	4	5
34 I read groups of words at one glance.	1	2	3	4	5
35 I make a practice of skimming articles.	1	2	3	4	5

	always (1)	often (2)	sometimes (3)	occasionally (4)	never (5)
36 In reading a paragraph I try to see the organisation of its thought content: I look for the main idea, and the details which support it.	1	2	3	4	5
37 I do not skip words or lines when reading.	1	2	3	4	5
38 In reading larger units of writing (articles, chaps.etc) I try to see the outline and total structure of the author's thought.	1	2	3	4	5
39 While reading, I am aware of questions which arise in my own thinking about the material being read.	1	2	3	4	5
40 I notice punctuation and try to use it as an aid toward helping me to read better.	1	2	3	4	5
41 As I read a paragraph I notice the ways by which the author develops the main idea, e.g. by restatement, by example or by contrast.	1	2	3	4	5
42 I try to read key words and phrases, and to dwell on the important words that convey the thought.	1	2	3	4	5
43 I vary my reading rate and reading techniques according to the purpose for which I am reading.	1	2	3	4	5
44 I try to find the main idea in paragraphs as I read them.	1	2	3	4	5
45 I survey an article before I actually read it.	1	2	3	4	5
46 I read most paragraphs in a basically questioning or interrogative frame of mind, looking for answers as I read.	1	2	3	4	5

	always (1)	often (2)	sometimes (3)	occasionally (4)	never (5)
47 I normally skim an article prior to reading it more carefully.	1	2	3	4	5
48 While reading I find myself agreeing or disagreeing with the author.	1	2	3	4	5
49 When reading I consciously change my rate of reading.	1	2	3	4	5
50 I try to read faster.	1	2	3	4	5
51 I work out the overall organisation of a text.	1	2	3	4	5
52 I plan my learning.	1	2	3	4	5
53 I tend to read for specific facts.	1	2	3	4	5
54 After reading a text I scan backwards and forwards to interrelate the various parts of it.	1	2	3	4	5
55 I read critically.	1	2	3	4	5
56 I make frequent notes as I go along.	1	2	3	4	5
57 When learning I have to read every word.	1	2	3	4	5
58 As I read I find myself thinking of alternative arguments to the one the author is putting over.	1	2	3	4	5
59 I make notes at the end of a section.	1	2	3	4	5
60 I tend to read for the main ideas in a text.	1	2	3	4	5

PLEASE WRITE:

1. A short paragraph that describes your way of learning when reading a course assignment.

2. A short paragraph that describes any particular problems you have with reading.

APPENDIX 4

A TAXONOMY OF READING PURPOSES IN THE COGNITIVE DOMAIN

Description	Problem Identification and Solution
Negotiating and focusing on one purpose, from a range of possible purposes.	Recall and Selection from the hierarchical set of skills for the purpose of accomplishing a self-initiated objective. To manipulate the text in a controlled but flexible way.
	Evaluation
A critical appraisal of the text.	To be critical of the author's meanings and overall semantic organisation intrinsically or extrinsically by comparing generated meanings with self-experience and belief.
	Extrapolation
An inferential approach to the text.	To be aware of limits of the knowledge structure at higher semantic levels and inferring by experience outside the knowledge structure a new re-organised structure.
Appreciation of the range of meaning in the text.	Recognition, Recall & Interpretation of an overall semantic organisation pattern in text, i.e. the overall arguments, such as, cause and effect relationships - main theme and elaborations - compare and contrast themes, and - Appreciation of the mode of transactional language - Instructive, Descriptive, Emotive, Imaginative, Persuasive, Entertaining, Informational, Evaluative, Exploratory.
	Interpretation to understand the inter-relationship between the levels of meaning units in the knowledge structure by the selection of meaning units related at one level and translate these into own words, e.g. a summary.
Knowledge of text with selection.	Recall in a hierarchical order of groups of words as levels of meaning units, from specifics to universals.
	Recognition in a hierarchical order of groups of words as levels of meaning units, from specifics to universal.
	Translation into own words in a linear order, after reading, of groups of words as meaning units.
Knowledge of text without selection.	Recall in a linear order after reading of groups of words, as meaning units, in a form close to the author.
	Recognition in a linear order after reading of groups of words, as meaning units.

Sections 1 - 6

1. Augstein, E. S. Harri. (1971) 'Reading Strategies and Learning Outcomes'. Ph.D. thesis. Brunel University.

2. Darwin, Charles (1859) 'The Origin of Species by Means of Natural Selection'; or 'The Preservation of Favoured Races in the Struggle of Life' (6th ed. reprinted). London: Oxford Un. Press, 1951.

3. Travers, R. M. W. (1971) 'Essentials of Learning' (3rd ed.) New York: Macmillan.

4. Thomas, L. F. & Augstein, E. S. Harri-. (1972) 'An Experimental Approach to the Study of Reading as a Learning Skill'. Research in Education. 8, Nov.

5. Bloom, B. et.al. (1956) 'Taxonomy of Educational Objectives'. Handbook 1, Cognitive Domain. New York: Longmans, Green & Co.

6. Robinson, F. P. (1941) 'Studies of Higher Level Reading Ability'. Journal of Educational Psychology, 32, 241-252.

Section 7

1. Polanyi, M. (1958) 'Personal Knowledge'. London: Routledge & Kegan Paul.

2. Rogers, C.R. (1963) 'Towards a Science of the Person'. Journal of Humanistic Psychology, 3, 72-92.

Section 8

1. Perry, W. G. (1959) 'Students' Use and Misuse of Reading Skills'; a report to a faculty. Harvard Educational Review, 29 (iii) 193-200.

2. Fitts, P. (1962) 'Factors in Complex Skill Training'. In Glaser (Ed.), Training, Research and Education. Pittsburgh: University of Pittsburgh Press.

3. Miller, G. (1970) 'Plans and the Structure of Behaviour'. London: Holt, Rinehart & Winston.

4. Rosenthal (1963) 'On the Social Psychology of the Psychological Experiment'. American Scientist, 51, 268-283.

PROJECT SPONSORED
BY S.S.R.C.

THE SELF-ORGANISED LEARNER
AND
THE PRINTED WORD

PAPER 3 - THE LEARNING CONVERSATION:
A GUIDED APPROACH

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex.

Laurie F. Thomas

E. Sheila Harri-Augstein

CONTENTS

		Page
1.	INTRODUCTION	1
2.	THE RESEARCH STRATEGY	1
2.1.	The Experimental Design and Procedure	1
2.2.	The Training Programme	3
2.2.1.	The Training Package	3
2.2.2.	The Kelly Repertory Grid	4
2.2.3.	The Tools and Techniques	5
2.3.	The Evaluation Measures	6
2.4.	Perspectives of the L., G.M. and E. Research Strategy for Reading-to-Learn	6
3.	RESULTS	6
3.1.	In-Training Data	8
3.1.1.	The Kelly Repertory Grid	8
3.1.2.	Routes through the Training Materials	12
3.2.	Evaluation Measures	13
4.	DISCUSSION AND CONCLUSIONS	17
	APPENDIX	
	REFERENCES	

THE LEARNING CONVERSATION:
A GUIDED APPROACH

1. INTRODUCTION

This is the second of a series of three studies, concerned with the development and evaluation of methods for helping students improve their use of reading as a learning skill. As discussed in Paper 1, a significant feature of the series has been a progressive movement away from orthodox experimental designs, towards a paradigm of research which involves the experimenter increasingly within the ongoing 'learning-to-learn' experiment. Gipsy Hill (G.H.) can be understood as occupying a position between Loughborough (L) and Brooklands (B), along this continuum. The G.H. Study took place when the L. Study was nearing completion, which meant that the research team were in a position to use the experience to modify the methodology. In contrast with L, the G.H. Training Programme was group-based and more freedom was offered within it. Members of the group were encouraged to generate their own feedback of performance, within each learning event. Thus, 'knowledge of results' feed back into and become part of the learning-to-learn process. In G.H., the experimenters handed over control of the immediate results of learning to the students and as a consequence no systematic record of within training measures was available. As part of the training programme the Kelly repertory grid technique was used to help students become aware of their use of reading and to expand the variety of purposes which they could pursue. Evaluation measures for the training programme consist of Pre- and Post-Training Tests, a Questionnaire and longer term records of Academic Performance. Comparisons were made between G.H. and L., on the basis of these short and long term evaluation measures and these are reported in Section 4.

2. THE RESEARCH STRATEGY

2.1. The Experimental Design and Procedure

The group of 9 mature first year students volunteered for one week's intensive training. During this period they were exempt from all curricular activities and were, therefore, able to concentrate exclusively on the training programme. Total training time amounted to approximately 40 hours. This was comparable with Study One of the L. Programme. However, the L. Programme was timetabled into the curriculum and extended for a period of two terms (Paper 2).

The overall design for the study followed the same pattern as that for L. Students were given a Pre- and Post-Training Test and Questionnaire, as a short term evaluation of training. Records of Academic Performance in Education before and some time after training were collected, as a longer term evaluation of training. None of the immediate measures used in the L. study were available but the results of the repertory grids were used to examine student assumptions about reading.

Text A & B for the Pre- and Post-Tests were matched as closely as possible for length, number of paragraphs, style, and conceptual complexity. The length of the texts was approximately 3,000 words. They consisted of 9 - 12 paragraphs and both texts were written by Charles Darwin. Each was an abbreviated version of one Chapter from "Origin of Species". They were "Variations under Nature" and "The Struggle for Existence". For the Pre- and Post-Tests the group were sub-divided into two and a cross-matched design was used.

	GROUP 1	GROUP 2
Pre-Test	Text A Test A	Text B Test B
	TRAINING	
Post Test	Text B Test B	Text A Test A

Table 1 A CROSS-MATCHED DESIGN FOR THE PRE- AND POST-TESTS

As in the L. Study, (Paper 2), the tests were designed to measure:-

(i) literal knowledge of the text;

(ii) the ability to re-organise the text, i.e. to select the main points and write a summary of the argument.

Details of the Questionnaire are presented in Paper 2 and the actual Questionnaire is presented in the Appendix of that paper.

No control groups were incorporated into the study. An increasing emphasis on the learners generating their own feedback of performance during training invalidates the concept of a controlled comparison. No neatly grouped statistical measures were expected and none were obtained. The experimental design is summarised in Table 2.

Phase	Experimental Subjects	Description
I	9	A Pre-Measure A long term measure of training effectiveness. Academic Grades in Principal Subjects. Education and PE Theory collected, averaged and recorded.
II	9	A Pre-Measure A short term measure of training effectiveness. A Questionnaire designed to explore skills and attitudes towards reading.
III	9	A Pre-Test A short term measure of training effectiveness. Pre-Test A Text A Test A
IV	9	THE TRAINING PROGRAMME consisting of the Reading-for-Learning Package.
V	9	A Post-Test A short term measure of training effectiveness. This was matched with the Pre-Test. Post-Test B Text B Test B
VI	9	A Post-Measure A short term measure of training effectiveness. The same Questionnaire as in Phase II
VII	9	A Post-Measure A long term measure of training effectiveness. Academic grades in the same two principal subjects collected, averaged and RECORDED. Subjects wrote their own subjective reports. Staff comments recorded.

Table 2 THE EXPERIMENTAL DESIGN

2.2. The Training Programme

To maximise opportunities for interaction with the equipment, materials, members of the research team, and with each other, the group of 9 students were offered training in two sub-groups. Students kept to the same sub-group throughout the training sessions. These sub-groups were identical with Groups 1 and 2, in the Pre- and Post-Test. After an initial introductory lecture on the Reading-for-Learning Model, Tools, and the Assessment procedures, the groups were run in parallel sessions of two hours' duration. While one group was free to practise on the training package provided, the other was taught to use the Reading-for-Learning tools and techniques. These were the Reading Recorder, the Purpose Taxonomy, the Flow Diagram and the Kelly Repertory Grid.

2.2.1. The Training Package

The O.U. equivalent of the L. Reading-for-Learning Modules (Paper 2) consisted of a more loosely structured package of materials. This package offered a repertoire of purposes, reading materials, and assessment procedures. The package contained:-

(i) 19 texts,

(ii) 4 Purposes for each text,

(iii) 4 Tests for each text,

(iv) Evaluation Exercises.

Altogether there were (4 x 19) 76 possible routes, through the package. Students were free to select as many routes as they wished, and to tackle these in any order. The texts were approximately matched for length and conceptual complexity. The texts were concerned with various aspects of the topic of "learning" and consisted of 500 - 800 word selections from Travers' "The Essentials of Learning". These were printed onto continuous stationery for use on the Reading Recorders. Of the 4 purposes, two were specified in detail before reading, and two were unspecified in the sense that the reader did not know in advance exactly what he should look for in the text. A fifth purpose was introduced into the package, after the second day. This was the construction of Flow Diagrams. The purposes are described in Table 3.

	Specific Facts	Main Ideas	
Specified	1	2	
Unspecified	3	4	5

1 = Search for Factual Items
2 = Search for Main Ideas
3 = Learning to recall or recognise Factual Items
4 = Learning to select and re-organise Main Ideas
5 = Constructing Flow Diagrams

Table 3 PURPOSES

The Tests for 1 and 2 were made up of multiple choice questions. The Tests for 3 were made up of multiple choice and free response questions. The Tests for 4 consisted of listing the main ideas and writing a summary. The Test for 5 consisted of constructing Flow Diagrams.

The evaluation exercises encouraged students to review their tactics and strategies of reading in relation to their purposes and outcomes. They were encouraged to question existing ways or habits of reading, and to invent new ways for reading effectively.

2.2.2. The Kelly Repertory Grid

The training methods used in this G.H. study were similar to those used in L. (Paper 2), but the repertory grid was introduced as an additional resource tool.

The Grid Technique

The grid is a vehicle for exploring the experiential world (thoughts and feelings) of an individual. The grid elicitation interview consists of two phases. In the first phase, the participator is asked to name a range of "elements" which would define a "universe of discourse". In the study, the universe of discourse was "purposes for reading". Interviewing techniques were used to guide the participant into reall' exploring his or her own reading until he or she could name vivid examples of different purposes from within this experience. Eliciting reading purposes can be aided by talking the subject through a diary of reading events, covering a day, week or month. Each event can be explored to identify a reading purpose.

When a representative sample of elements (purposes) has been elicited the subject is then moved into the second phase of the interview. This is concerned with eliciting "constructs" and assigning elements to the poles of these constructs. Specifically, each purpose for reading is written on a card and the subject is offered three cards at a time. He or she is asked to think about the three purposes whollistically and to decide which two out of the three are most alike. Again, sensitive interviewing can enhance the quality of the response. When a similar pair has been identified the subject is asked to describe the nature of the similarity. This description constitutes one pole of the construct. A description of how the third card or "singleton" differs from the pair is then elicited. This constitutes the second pole of the construct.

For example, Sybil (grid reported in Section 3 (Results)) offers the following three purposes among her 10 elements:-

(i) Because it was recommended,

(ii) revision for exams,

(iii) for reference.

Sybil decided that "for reference" and "because it was recommended" were more alike each other than "revision for examinations". She describes the similarity between the pair as "influenced by other people's ideas and choices" and the different as "set work under pressure". Thus, one of Sybil's constructs was:-

Pole 1		Pole 2
Influenced by other people's ideas and choices	v	Set work under pressure

Once the two poles have been elicited, the subject is asked to imagine a five point scale, ranging from:-

This defines the five point scale. The subject assigns each element to a position on this scale. For example, Sybil rates each of her ten purposes for reading as:-

Elements									
1	2	3	4	5	6	7	8	9	10
✓		✗	✓	✗	✓	✗	✓	✗	✓

on the basis of her construct.

Using fresh sets of three elements, written on cards, Sybil continues to identify constructs, and to rate all elements on each construct, until her repertoire of constructs is exhausted. A systems ic randomising technique is used for selecting each fresh "triad" or set of three elements. This ensures that no one pair of elements is repeated more often than any other in the combination sequence.

Thus, the repertory grid technique makes explicit a subject's views of significant elements in her thinking and feeling about a topic and the dimensions in which the topic is thought about. Constructing this raw grid is a useful exercise in itself. The subject becomes immediately more aware of the topic and of the framework in which she perceives it. However, focusing the grid produces a more powerful awareness raising experience for the participant. Elements are correlated with elements to produce a total "relations matrix". This in turn can be cluster-analysed to reveal 'what goes with what' in the subject's thinking. Constructs can be similarly clustered. The Thomas focusing technique displays the grid responses more meaningfully by re-ordering the elements and constructs in cluster sequence (1) (Sybil's focused grid Table 6).

2.2.3. The Tools and Techniques

The teaching sessions were organised on a lecture/workshop basis. The objective of the sessions was to familiarise the students with the tools and techniques. The sessions can be grouped into the following three events:-

(i) The Reading Recorder (Paper 1)

Lecture: on the Read Record, types of Tactics and Strategies, how these relate to Purpose and Outcome.

Workshop: Learning to interpret students' own Read Records, exchange of Read Records, learning to interpret and compare Read Records amongst the group.

(ii) The Flow Diagram (Paper 1)

Lecture: an introduction to the technique, with examples of application to different texts.

Workshop: Learning to construct Flow Diagrams. Learning to relate the Flow Diagram to the Read Record, exchange of Flow Diagrams, learning to construct a 'shared' Flow Diagram, within the group.

(iii) The Kelly Grid

Lecture: on Personal Construct Theory.

Workshop: Elicitation of grids, with 'books' and 'purposes' as elements, exchange of constructs and feedback of individual grids.

Individual supervision in the workshop sessions was minimal and because of the degree of freedom offered within the training package there was less opportunity for the provision of feedback by the researchers, during the learning events.

Throughout, the onus was on the learner to generate his own feedback and to assess his own performance. Researchers' efforts went into demonstrating the tools and techniques and to help students to review and to refine their reading strategies and outcomes. As much as possible, students were encouraged to use their group as referent for evaluating their own performance.

2.3. The Evaluation Measures

A training programme designed to help students to become more self-organised in their Reading-for-Learning, poses problems for evaluation. In the G.H. Study, the students exercised greater choice within the training package, compared with the L. Study. The conflict between a carefully prepared research design with built-in evaluation measures, on the one hand, and the learner taking over the assessment of his performance in the ongoing learning events on the other, was sharpened and became more acute in the G.H. Study.

It was pointed out in the Introduction, that the research team were unable to obtain in-training measures comparable with those recorded at L. The students took over responsibility for the assessment of the learning events. It was suggested to the students that they kept records of these assessments. These could remain private and there was no guarantee that they were faithfully and meticulously recorded. Read Records for each student were made available to the researchers, but these lose their meaning in the absence of Purpose/Outcome evaluation measures. However, a record was kept of the routes which each student chose to pursue, in the training package, as well as of the total number of hours spent in training. This is presented in the Results Section.

Changes in responses to the Questionnaire, Pre- and Post-Test measures, as well as longer term changes in academic grades in Education, and by the teaching staff comments, are presented in the Results Section. Education grades were recorded at the beginning and end of the term in which the training took place. This was the spring term and the training took place in the first week of the term. The first and the last grade was taken, for comparison. Both were essays. These grades were compared on the twelve point scale (from D- to A+) which was used by G.H. tutors.

2.4. Perspectives of the L., G.H. and B. Research Strategy for Reading-to-Learn

Table 4 summarises the criteria which form the basis for specifying the dimension of the research strategy continuum. One extreme is the orthodox before/after experiment, the opposite end is the researcher monitoring the learners' researching of their processes. L., G.H. and B. occupy different positions on this continuum.

3. RESULTS

The results are reported in two sections:-

(i) The within training measures (immediate measures in L.) are restricted to -

(a) The Kelly Repertory Grid,

and (b) Individual routes through the training materials.

(ii) The short and longer term "before and after" measures include:-

(a) Pre- and Post-Test scores,

(b) The Questionnaire,

(c) Changes in Academic Performance.

The Loughborough Study (L.)	The Gipsy Hill Study (G.H.)	The Brooklands Study (B.)
Researcher in control of in-training, and before/after, evaluation measures.	Researcher in control of before/after evaluation measures only.	Researcher interacts fully, no preplanned evaluation measures.
Control group for before/after evaluation measures.	No control group.	No control group.
Individual based Researcher/Learner interaction within the Modules.	Group-based Researcher/Learner interaction.	Individual based Researcher/Learner interaction, with group discussions.
Aspects of the conversation - Tools, Model, Process, Assessment Procedures, Personal Support.	Lectures on Model and Tools, Conversations on - In-training Assessment Procedures, Personal Support.	Aspects of conversation - Learning from Books, Learning Purposes, Life Purposes, Attitudes to Learning, Personal Support
1 Researcher	4 Researchers	6 Researchers
Tools:- Reading Recorder, Flow Diagram, Purpose Taxonomy, Modules, used in training.	Tools:- Reading Recorder, Flow Diagram, Kelly Grid, Training Package, used in training.	Tools:- Reading Recorder, Flow Diagram, Modules, Training Package, Kelly Grid, Purpose Taxonomy, available in training.
Training took the form of a series of 5 Structured Modules, - 30 alternative routes through the Modules (6 per Module).	Training took the form of a loosely structured package, - 76 alternative routes through the package.	No preplanned training procedure - all tools available as a resource, plus all members of the research team.
5 Modules tackled in a predefined sequence, 1 - 5.	Freedom to select route through the package.	No prescribed training package.
Researcher interprets and offers feedback of performance whilst encouraging self-organisation in training.	The onus is on the group of learners to generate their own feedback.	The onus is on the individual learner to generate his own feedback.
Total training time approximately 40 hours.	Total training time approximately 40 hours.	Total training time approximately 40 hours.

Table 4 PERSPECTIVES OF THE L., G.H. AND B. RESEARCH STRATEGY FOR READING-TO-LEARN

3.1. In-Training Data

3.1.1. The Kelly Repertory Grid

Nine grids were elicited, one from each student. They were asked to identify a number of purposes for reading, and after careful individual discussion each produced ten 'purposes' which they felt represented their range of reading activities.

Appendix 1 shows the nine focused grids containing a total of 90 purposes. Table 5 shows the original "raw" form of the grid for one student, "Sybil". This contains seven constructs. Table 6 shows the same grid with its responses focused. It is immediately clear that Sybil sees:-

E 9 for Essay or Seminar

E 3 for Exam Revision

E 7 for Set for Discussion

as all identical, and as all lying on the X poles of:-

C 4 - Anxiety, never feel I have learned anything

C 1 Specific set work

C 5 Set work under pressure

C 6 Set work

C 2 Set work with reason and purpose

C 7 Aim and purpose, to gain knowledge.

Similarly:-

E 6 and E 1 are very nearly identical, and E 8 and E 4 are nearly identical, but together with E 10 and E 2 they lie at the opposite poles to E 9, E 3, E 7 on almost all of Sybil's constructs. Sybil, confronted with her focused grid, was very surprised to find that she 'really' had only three ways of thinking and feeling about purposes for reading:-

C 3	Curiosity from own desire for knowledge	v	Curiosity induced by others' ideas
C 4, C 1, C 5, C 6.	Satisfaction, Knowledge, Own interest by choice	v	Anxiety, Set work, Never feel to have learned anything
C 2, C 7.	No Aim	v	Aim and Purpose

For Sybil this divided her reading experiences roughly into two groups, those assigned to the left hand set of poles and those assigned to the right hand poles. Given this "simple view" as a starting point, she then considered the deviations, i.e. the X's on E 8, E 4 and E 6, and the ✓ on E 5. Exchanging her constructs, elements and experiences with other members of the group enabled Sybil considerably to elaborate and refine her ideas about "purposes for reading".

Table 7 shows a Consensus Grid for all nine students. It was obtained by comparing the individual focused grids. It was discovered that the clustering of elements for each individual showed considerable overlap and that this could be expressed as three major "consensus element clusters". Similarly, the construct clusters were compared to obtain the four major "consensus construct clusters". The implications embedded in Table 7 carry a sad commentary on the effects of institutional education on students' attitudes to reading.

	✓	✓	×	X	1 INTEREST/CURIOSITY	2 TO PASS TIME	3 EXAMINATION REVISION	4 FOR REFERENCE	5 OUGHT TO, BUT DON'T FEEL LIKE	6 KNOWLEDGE OF SUBJECT	7 SET FOR DISCUSSION	8 BECAUSE RECOMMENDED	9 ESSAY/SEMINAR	10 FOR PLEASURE
1.	OWN INTEREST, INDEPENDENT OF SET WORK		SPECIFIC SET WORK		✓		X	✓	×	✓	X	✓	X	
2.	NO AIM, NO REASON		SET WORK WITH REASON AND PURPOSE			✓	X		✓		X	×	X	✓
3.	CURIOSITY FROM OWN DESIRE FOR KNOWLEDGE		CURIOSITY INDUCED BY OTHERS' IDEAS		✓			X		✓		X		✓
4.	PLEASURE, FOR KNOWLEDGE AND SATISFACTION		ANXIETY, NEVER FEEL TO HAVE LEARNED ANYTHING		✓		×	✓	X	✓	×		×	✓
5.	INFLUENCED BY OTHERS' IDEAS BY CHOICE		SET WORK UNDER PRESSURE		✓		X	✓	×	✓	X	✓	X	✓
6.	CHOICE BUT NOT NECESSARILY PLEASURE		SET WORK		✓	✓	X	✓		✓	X	✓	X	
7.	NO AIM, NOT HOPING FOR RESULTS		AIM AND PURPOSE, TO GAIN KNOWLEDGE		X	✓	X	X		X	X		X	✓

SYBIL'S RAW GRID
PURPOSES FOR READING

Table 5

SYBIL'S FOCUSED GRID

PURPOSES FOR READING

	✓	✓	×	×		8 BECAUSE RECOMMENDED	4 REFERENCE	6 KNOWLEDGE OF SUBJECT	1 INTEREST CURIOSITY	10 PLEASURE	2 PASS TIME	5 OUGHT BUT DON'T FEEL LIKE	9 ESSAY SEMINAR	3 EXAM REVISION	7 SET FOR DISCUSSION	
3	CURIOSITY FROM OWN DESIRE FOR KNOWLEDGE			CURIOSITY INDUCED BY OTHERS' IDEAS		×	×	✓	✓	✓						3
4	PLEASURE FOR KNOWLEDGE AND SATISFACTION			ANXIETY, NEVER FEEL TO HAVE LEARNED ANYTHING			✓	✓	✓	✓		×	×	×	×	4
1	OWN INTEREST INDEPENDANT OF SET WORK			SPECIFIC SET WORK		✓	✓	✓	✓			×	✓	✓	✓	1
5	INFLUENCED BY OTHERS' IDEAS BY CHOICE			SET WORK UNDER PRESSURE		✓	✓	✓	✓	✓		×	✓	✓	✓	5
6	CHOICE BUT NOT NECESSARILY PLEASURE			SET WORK		✓	✓	✓	✓		✓		✓	✓	✓	6
2	NO AIM, NO REASON			SET WORK WITH REASON & PURPOSE		×				✓	✓	✓	✓	✓	✓	2
7	NO AIM NOT HOPING FOR RESULTS			AIM & PURPOSE TO GAIN KNOWLEDGE			×	×	×	✓	✓		✓	✓	✓	7
						8	4	6	1	10	2	5	9	3	7	

Table 6

Construct clusters ✓ ✓ o x ✗			Element clusters		
			Told to, Set for discussion, A set text, For exams, For essays and seminars, Further studies, For principles, For remembering, Scanning in a library-bookshop.	Pleasure and relaxation, Deliberate enjoyment, Consolation, Be private, To escape reality, To avoid TV, To give impression of an intellectual, Ought to though don't feel like, stir up emotions.	New ideas, Stimulate thought, Foundation for reasoning, Improve communication, See others'lifestyle, Others'views, Current affairs, Confirm own ideas, Interest and Curiosity, Recommended, Personal Reference, Knowledge of a 'thing', Widen imagination, Knowledge of literature, For vocabulary and conversation, Film reviews, Read to the children (stories).
Pole 1	Pole 2		A	B	C
Easy, Mental health, Want to, Spontaneous, Enjoy, New,	Difficult, Ambition, Ought to, Task, Not necessarily enjoy, Follow up,	1	✗	✓	✓
Knowledge for self, Light Reading, Everyday, Pleasure, Wide,	For Exam, Parrot-like recall, Professional, Knowledge of work, Specific,	2	✗	✓	✓
Imaginative, Positive, In depth, Creative,	Mundane, Negative, Lazy, Passive,	3	x	o	✓
For information, Curiosity, Out of myself, Communication,	For self, Not curiosity, Into myself, Private me,	4	o	✗	✓

A CONSENSUS GRID

Table 1

3.1.2. Routes through the Training Materials

Table 8 summarises how the nine students worked on the exercise materials. Free to select their own purposes and texts, they varied considerably in the choices made.

Subject	TEXTS																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1			1	3	3		1	2		1		3	1			1			
2		1	3		2	2			2		4/5			2				4/5	
3			2			1		4/5			2			4/5			4/5		
4		1			2		2			2			2	2			4/5		
5		1			1	1		1			3								
6				2	3		2			3			3		4/5				
7		1	1		1		1		1	3	1			3					
8		4/5		1		2	2		2			2			4/5				
9			1			1		2	1			2							

Purposes Nos. 1 - 5

Table 8 SUBJECTS' TRAINING ON PURPOSES AND TEXTS

Table 9 uses the data in Table 8 but here it is expressed in terms of "time" spent training. In the first part training time is compared with improvement on Pre- and Post-Test score on factual items. This shows that significant time spent on summarising or making Flow Diagrams (Purpose 4/5) usually pays off in ability to remember factual items. Secondarily, exercises on recognising and searching for factual items (Purposes 1 & 3) also improve factual item scores. In the second part of Table 9 training times are compared with improvement on ability to pick out Main Points. Again, exercise on Purpose 4/5 seems to produce most improvement, particularly when combined with exercise on Purpose 2. In the final section of Table 9, training time is compared with improvement in combined score. Exercise on Purpose 4/5 with Purpose 2 or on Purposes 1 & 3 produces significant results.

Purposes	FACTUAL ITEM								
Score	50	41	33	33	33	15	2	0	0
1	17	20	12	140	156	76	87	18	-
2	63	103	168	-	27	55	-	144	73
3	-	39	-	74	121	-	37	-	143
4/5	187	124	85	-	-	-	-	116	51
	MAIN POINTS								
Score	33	23	23	22	11	11	11	-11	-22
1	17	20	12	-	18	156	140	76	87
2	63	103	168	73	144	27	-	55	-
3	-	39	-	143	-	121	74	-	37
4/5	187	124	85	51	116	-	-	-	-
	COMBINED SCORES								
Score	42	32	28	22	22	11	6	1	-10
1	17	20	12	156	140	-	18	76	87
2	63	103	168	27	-	73	144	55	-
3	-	39	-	121	74	143	-	-	37
4/5	187	124	85	-	-	51	116	-	-

Table 9 A COMPARISON OF IMPROVEMENTS IN READING SCORES WITH TIME SPENT TRAINING ON EACH PURPOSE

3.2. Evaluation Measures

No significant difference was found between Test A and B in the cross matched design for the Pre- and Post-Test. The main point, factual items and combined score as well as reading rate (in lines per minute) for each member of the group in the Pre- and Post-Tests, is shown in Table 10.

Pre-Training					Post-Training			
Lines/ Min.	Main Points	Factual Items	Combined Score	SUBJECT	Lines/ Min.	Main Points	Factual Items	Combined Score
4.2	33%	67%	50%	1	8.3	44	100	72%
5.6	44	42	43	2	9.1	67	83	75
2.5	22	17	19	3	7.7	55	67	61
10.0	44	50	47	4	10.6	67	83	75
4.0	55	60	61	5	3.3	33	68	51
5.6	22	83	52	6	4.0	44	83	63
11.5	33	50	41	7	7.1	44	83	63
7.1	67	83	75	8	4.2	78	83	81
7.1	33	68	51	9	7.7	22	83	52

Table 10 SUMMARY OF CHANGES IN READING RATE AND LEARNING PERFORMANCE (Pre- and Post-Training)

This shows that five students increased their reading rate and improved their test score. Three students decreased their rate of reading and improved their test score. One student decreased her rate of reading and got worse. The L. students all decreased their speed and improved their test score, the top score being 91% and the bottom score 71%. In G.H. the test score ranged from 81% to 51%.

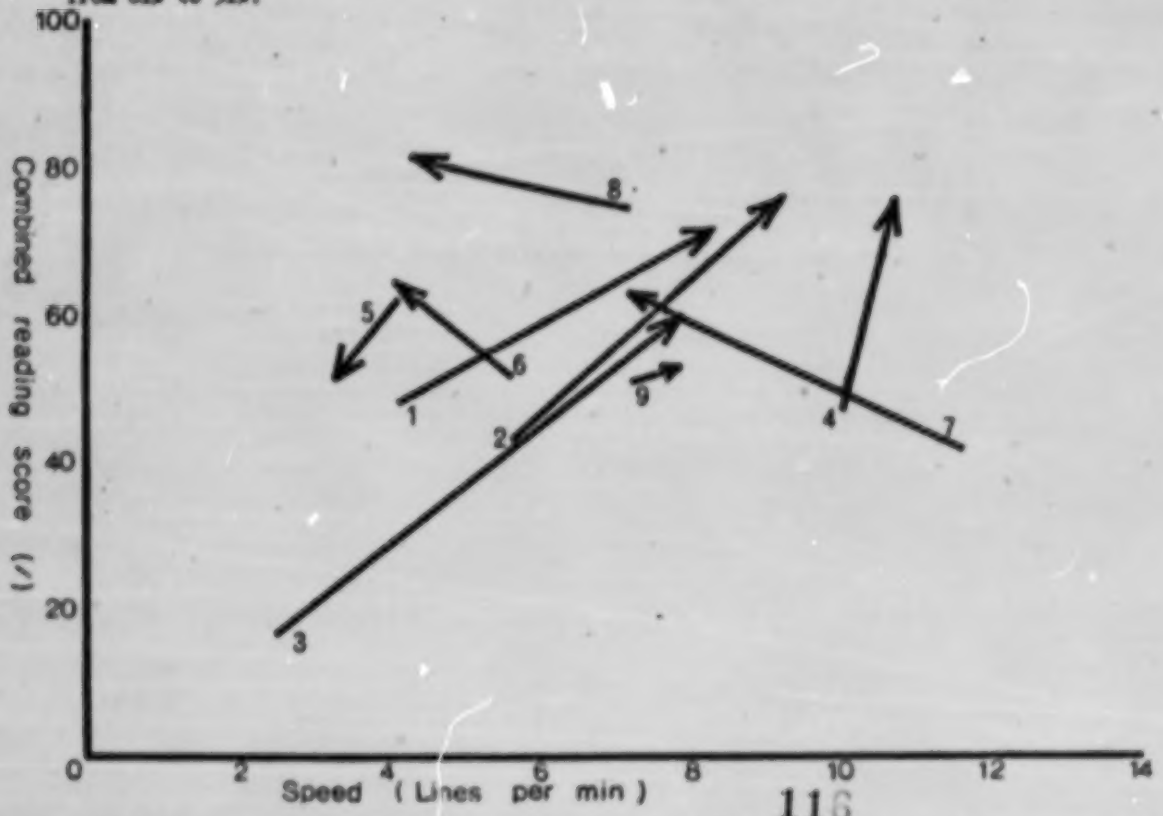


Table 11 CHANGES IN READING SCORE AND RATE

The combined reading score and reading rate is summarised graphically in Table 11.

The relationship between the changes in the factual item and main item score for the individual students is shown in Table 12. This shows that six students improved their factual item score, three students remained unchanged, and one student got worse. Seven students improved their main item score and two got worse. Again, in the L. study, all students significantly improved their factual item and main item score.

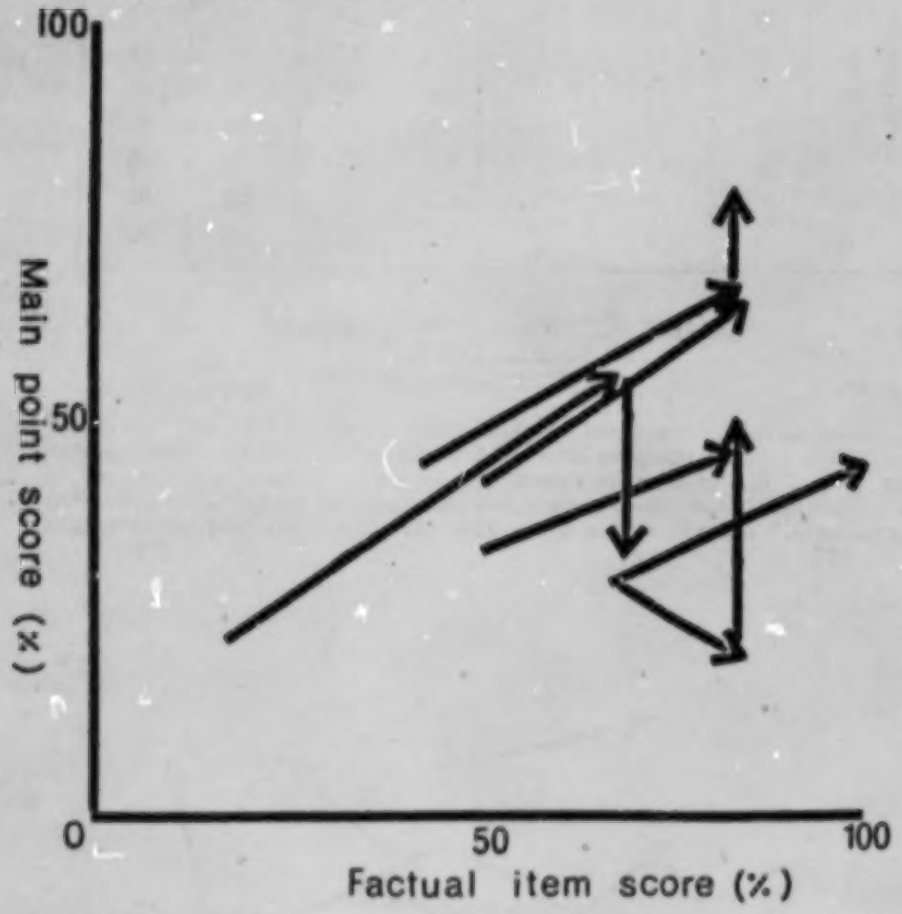


Table 12

Changes in student responses to the Questionnaires are shown in Table 13. Students become more flexible in their methods of reading, they plan their reading more, they search for organisation in the text. There was also a trend towards more questioning of what they read, and to enjoy their reading-for-learning. A significant difference between responses of students in G.H. and L. was that in the former, most significant change was towards increased flexibility, while in the latter it was for greater planning.

Changes in Academic Performance in the Education Course at the College after one term are shown in Table 14. This shows that all students improved, after training.

No. of Q's.	Sub-Scale +		Sub-Scale -
7	I find words and sentences easy to read	N.S. ←	I often stumble over unusual words and long sentences
9	I read for main ideas	N.S. 0	I read to remember facts
5	I question what I read	N.S. 0.1 ←	I accept what I read
6	I read fast	N.S. ←	I read too slowly
9	I am flexible in using various methods of reading for learning	.001 ←	I always read in the same way
6	I plan my reading	.01 ←	I seldom plan my reading
5	I search for organisation in a text	.01 ←	I take a text as it comes
6	I like reading for learning	N.S. 0.1 ←	I dislike reading for learning
6	I take few notes	N.S. →	I take many notes

Key: N.S. = Not significant

Table 13 CHANGE IN STUDENT RESPONSES TO A QUESTIONNAIRE

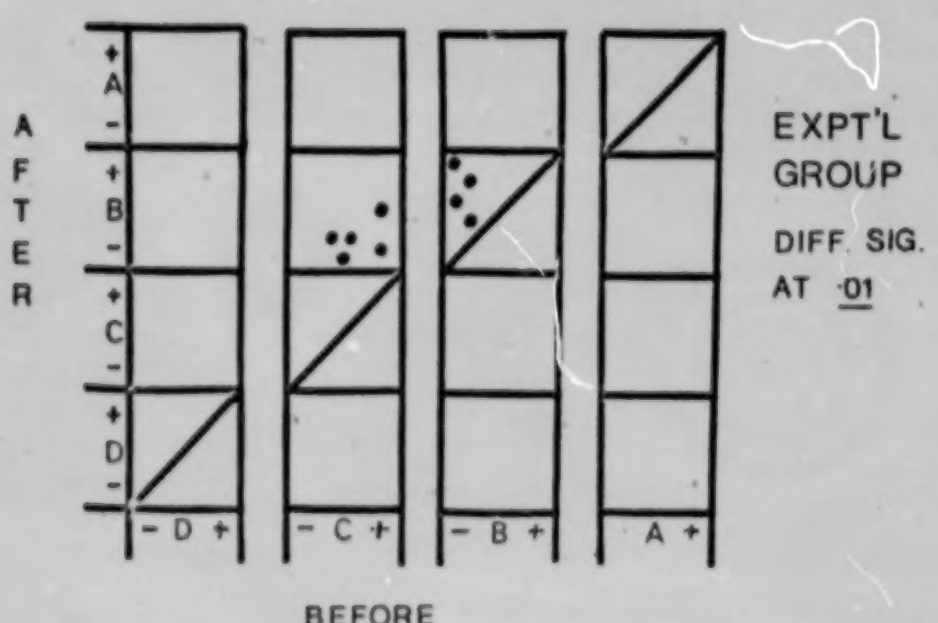


Table 14 CHANGE IN ACADEMIC PERFORMANCE

The individual grades are tabulated in Table 15.

Ss.	Before	After	Change
3	C	B-	+2
7	C	B-	+2
6	C	B-	+2
5	C+	B-	+1
2	C+	B	+2
9	B-	B	+1
4	B-	B+	+2
1	B-	B+	+2
8	B	B+	+1

Significant Improvement .01 Experimental Group

Table 15 CHANGES IN ACADEMIC PERFORMANCE : EDUCATION COURSE

Table 16 shows changes in the Pre- and Post-Test score, and relates these to changes in Academic Performance, for each student. This data is also represented graphically in Section 4, and compared with similar changes recorded for the L.[illegible] study.

Subjects	Comb. Score			Academic Perf.		
	Pre-Test	Post-Test	Change	Pre	Post	Change
1	50	72	22	B-	B+	2
2	43	75	32	C+	B	2
3	19	61	42	C	B-	2
4	47	75	28	B-	B+	2
5	61	51	-10	C+	B-	1
6	52	63	11	C	B-	2
7	41	63	22	C	B-	2
8	75	81	6	B	B+	1
9	51	52	1	B-	B	1

Table 16 A SUMMARY OF CHANGES IN TEST SCORE AND IN ACADEMIC PERFORMANCE

Some members of the teaching staff in Psychology and in Education were impressed by the students' more positive attitudes towards learning, and to their improved writing and seminar skills.

4. DISCUSSION AND CONCLUSIONS

An action research approach which offers students a mix of intensive group teaching of the tools and techniques, and considerable individual freedom within a Reading-for-Learning training package, produced data which raises interesting questions about the self-organised learner, the advisory teacher, feedback and assessment, and the research strategy.

The consensus repertory grid indicates that these students construe their purposes for reading within three major meaning clusters. The first can be seen as clearly associated with their education. It contains elements such as 'for exams', 'for a set text' and 'for essays and seminars'. In general, this group is construed as 'task oriented', 'for exams' and 'rather negative'. Other constructs cluster around these core meanings. A contrasting group of elements seems concerned with learning for its own sake (unconnected with formal education), such as 'for new ideas', 'to see others' lifestyle' and 'to improve communication'. These are construed on the opposite poles of the same construct groupings as above, i.e. as 'spontaneous', 'pleasurable', 'positive' and 'curious'. The middle group of elements is concerned with the creation of pleasurable or tolerable inner states, such as 'escape reality', 'escape boredom', 'stir up emotions' and 'deliberate enjoyment'. Whilst this group is assigned to the 'spontaneous', 'pleasurable' poles of the first two groups of constructs, it is neutral on the middle group and is assigned to the 'private' 'self' pole of the fourth group of constructs.

The implications of this composite grid are that many students find their formal educational reading rather a burden. Although no follow-up grids were elicited, the Questionnaire shows that the training course changed this negative attitude.

During training students spent much more of their time on the more complex purposes, such as the interpretation of main ideas (4) and the sharing of meanings by means of the Flow Diagram (5). In discussion at the end of the course, however, they said that they would have liked to have spent more time on the more specific purposes (1 - 3). Table 11 shows the emphasis given to the five purposes, in G.H. and L.

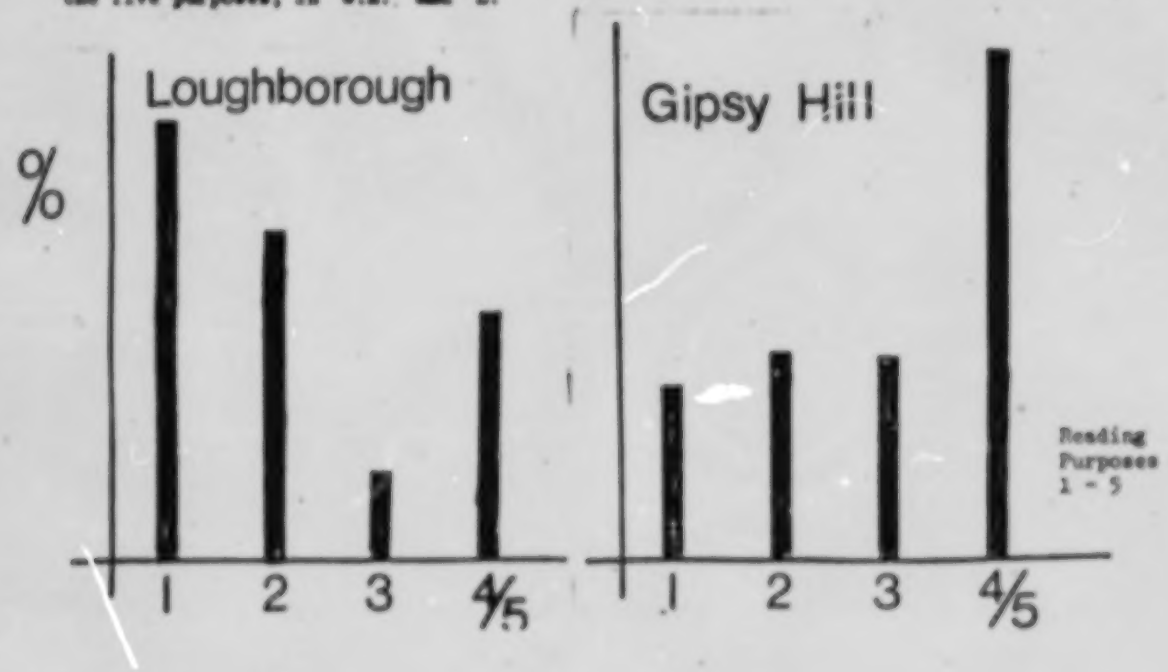


Table 11 NUMBER OF EXERCISES ON EACH PURPOSE

Despite the difficulty of measuring changes in performance during the learning events, significant changes took place in the 'before' and 'after' measures. These changes were more various than in the more tightly structured L. situation and no neat statistical grouping of results was obtained. G.H. students produced less improvement along the dimensions which were used in the Pre- and Post-Test and the improvement was much more diverse. In L. the within training measures as well as the Pre- and Post-Test measures, showed a well organised movement along the dimensions that the researcher thought to be important. In G.H. , the within training assessment measures were lost to the researcher but the routes through the package were various (Table 8) and the Pre- and Post-Test measures were dispersed (Table 12 and Table 13).

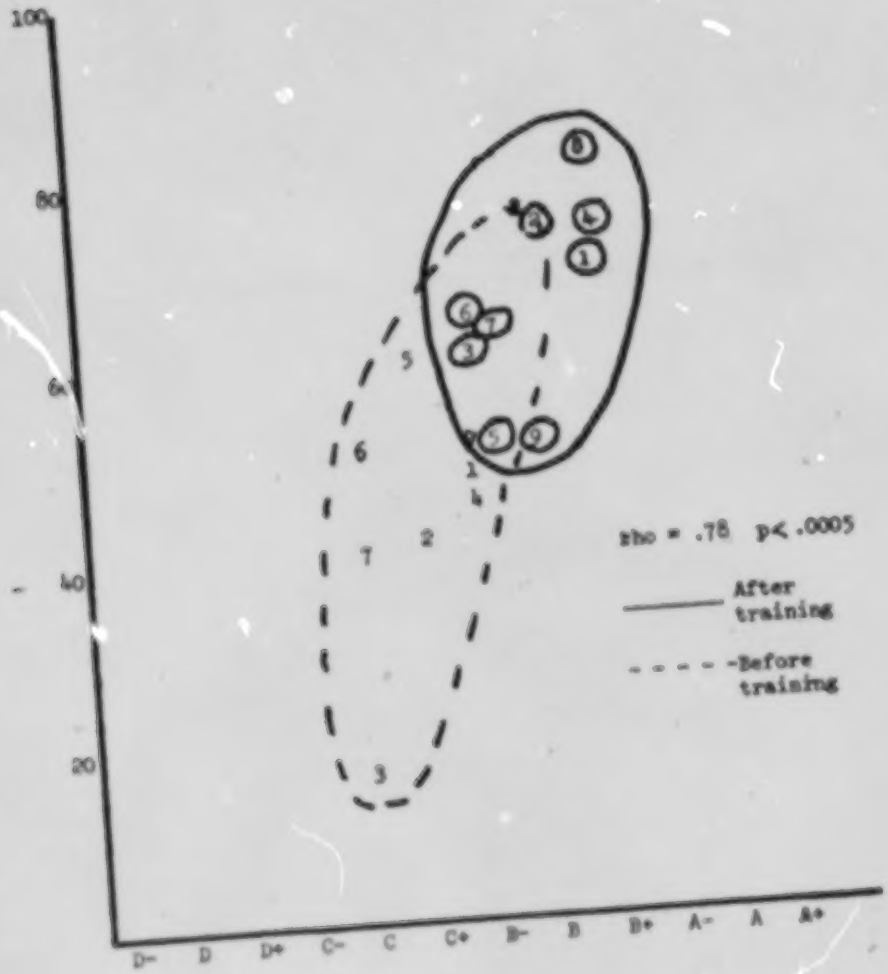


Table 18 G.H. READING PERFORMANCE COMPARED TO ACADEMIC GRADE

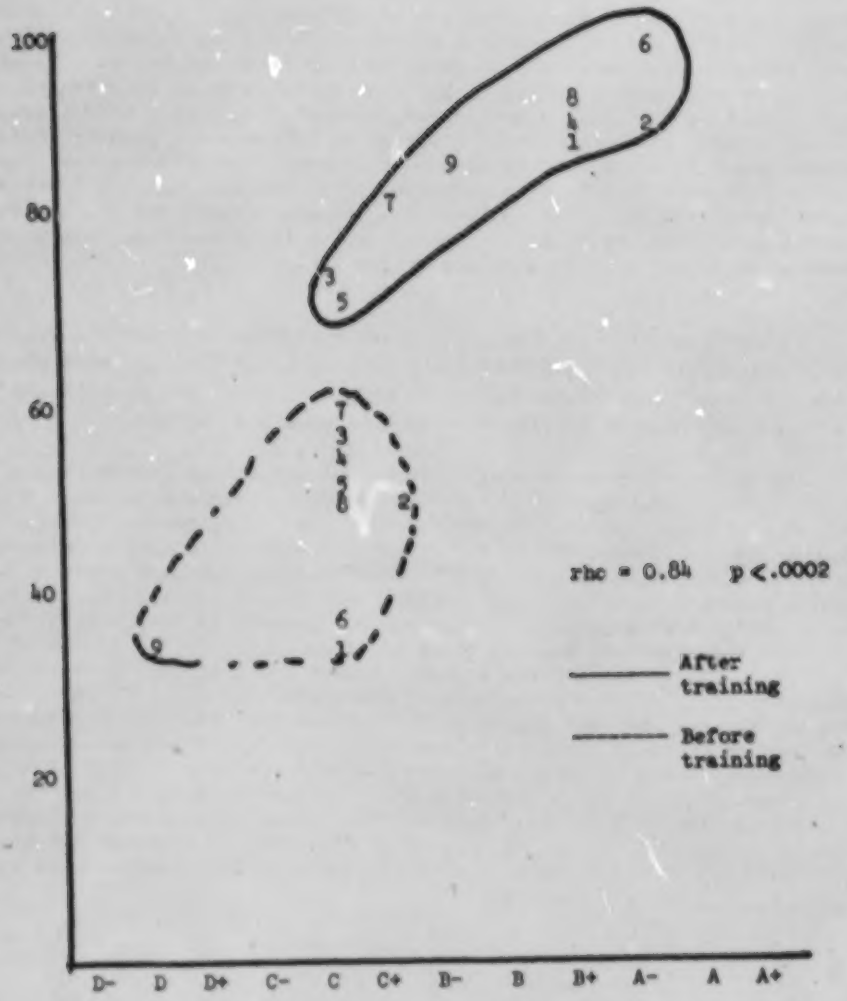


Table 19 L. READING PERFORMANCE COMPARED TO ACADEMIC GRADE

All students improved their grades in the Education Course. Clearly, a direct comparison of academic performance between G.H. and L. on the basis of the absolute grades awarded, is not justifiable. The staff must operate differing standards and values in their criteria for awarding grades. However, changes in academic performances before and after training are more comparable. Tables 18 and 19 illustrate the relationship between improvement in reading performance in G.H. and L. The improvement is startling. Yet, there are interesting differences in the pattern of improvement. Assuming that students were motivated to get through their Education Course, in both cases, (and there was no evidence from staff nor students that this was not the case) a more controlled yet intensively individual teaching approach which typified L. contributed to a much more startling improvement. Offering more freedom in the learning events, with opportunities for group interaction, produced less startling improvements. In being free to choose, it may well be possible that the ways in which the students took off, in exploring their skills, were not those which the academic staff valued. The criteria for awarding grades may not be those the students have chosen to attend to in developing their learning competency. The Consensus repertory grid data supports this claim.

In the Questionnaire, the G.H. students affirmed that they had become more flexible in their Reading-for-Learning skills, while the L. students did not produce a significant change on this dimension. Both groups affirmed that, after training, they enjoyed Reading-for-Learning more than before.

The G.H. study has served to emphasise the dilemma, made explicit in Papers 1 & 2 of the series: helping students to improve their learning-to-learn skills and an evaluation of this approach in the researcher's terms, became conflicting purposes. The role of the learner and of the researcher within the action research programme needs to be specified more rigorously, the teaching approach needs to be more carefully scrutinised, and a more effective research paradigm for learning-to-learn, needs to be mapped out. Further refinements to the Reading-for-Learning Model and the Awareness Raising Tools are essential. The inclusion of the repertory grid within the library of tools proved useful for heightening awareness of reading purposes. This was a more personally meaningful way of differentiating purposes than the Purpose Taxonomy (Paper 1, 2). In emphasising self-assessment in the higher order purposes the Flow Diagram technique failed to make explicit the uniquely individual criteria which the students operated. Participative learner and researcher experiences present a new challenge in action research: who sets up the criteria, chooses the materials, takes measurements and interprets the results? The need to develop a paradigm for LEARNING CONVERSATION and CONVERSATIONAL RESEARCH led to the third study, at Brooklands, which is reported in Papers 4 and 5 of this series.

PAPER 1
APPENDIX 1

- 1 -

FIONA'S FOCUSED GRID

PURPOSES FOR READING

✓	✓	×	X	GIVE IMPRESSION OF INTELLIGENCE	FEEL OF DOING SOMETHING WORTHWHILE FOR TEACHER	AVOID T.V.	GET AWAY FROM REALITY	RELAXATION	STIR UP EMOTIONS	BE PRIVATE AND UNDISTURBED	CONFIRM OWN IDEAS	FICTURE OTHER LIFE STYLES	INFORMATION OF PERSONAL INTEREST
FORCES ME BACK ONTO MYSELF			TAKES ME OUT OF MYSELF	✓	✓	✓	✓	X	×	×	✓	X	X
IN RESPONSE TO EGO'S DEMANDS			IGNORE'S EGO'S DEMANDS	✓	✓	✓	✓	✓	✓	×	X	X	X
TO IDENTIFY SELF TO OTHERS			TO ESCAPE FROM OTHERS	✓		×	X	X	×	×	X		✓
DOES NOT LEAD TO CONCENTRATION			DOES LEAD TO CONCENTRATION	✓	✓		✓	X	X	X	×	×	×
SELF-DISCIPLINE, READING FOR READINGS SAKE			READING FOR INFORMATION		✓			✓	✓	×	X	X	X
CURIOSITY DORMANT			CURIOSITY AROUSED	✓		✓	×	✓	✓	✓	X	X	X

VALERIE'S FOCUSED GRID

PURPOSES FOR READING

	✓	✓	X	X
1	MORE DIFFICULT CONSCIOUS EFFORT INVOLVED		SUBCONSCIOUS LEARNING LESS EFFORT INVOLVED	
4	INVOLVES CONSCIOUS DEDUCTION FROM VARIED SOURCES		MORE AN INITIAL STIMULUS (TO NEW THOUGHTS).	
2	CREATES GENERAL STORE OF INFORMATION		RELATES TO PERSONAL APPLICATION	
3	PRIVATE THOUGHTS RATHER THAN COMMUNICATION OF IDEAS		LEADS TO ABILITY TO COMMUNICATE LOGICALLY	

	INTEREST	OTHERS OPINIONS	REMOULD OWN OPINIONS	IMPROVE COMMUNICATIONS	CREATE FOUNDATION FOR REASONING	CURRENT EVENTS	WIDEN IMAGINATION	APPLICATION OF JUDGED PRINCIPLE	LEARNING	KNOWLEDGE OF SPECIFIC SUBJECT
1	X				✓	X	X	✓	✓	✓
4	X	X	X	X	X			✓	✓	✓
2	X	X	X	X	X		X	X	✓	✓
3	X	X	X	X	X	X	✓		X	X

NINA'S FOCUSED GRID

PURPOSES FOR READING

			AMUSEMENT	RELAXATION	SF AND NOVELS	KNOW FUTURE	CURRENT EVENTS	KNOW PAST	KNOWLEDGE OF LITERATURE	MAP READING	HOW TO GET PLACES	MEANINGS FOR WORDS	SPECIFIC LEARNING	FACTUAL KNOWLEDGE
9	ONE SPHERE OF KNOWLEDGE	NO BOUNDARIES TO SPHERE OF SUBJECT	X	X	X	X	X	✓	X	✓	✓	✓	X	X
6	PLEASURE	KNOWLEDGE	✓	✓	X	X	X	✓	✓	✓	✓	X	X	X
3	PAST	PRESENT AND FUTURE	✓	✓	X	X	X	✓	✓	X	X	X	X	✓
2	GENERAL WIDE SPHERE	SPECIFIC WORDS OR SENTENCES	✓	✓		✓	✓	✓	✓	X	X	X	X	X
7	UNKNOWN FACTS	KNOWN FACTS	✓	✓	X	✓	X	X	X	X	X	X	X	X
5	NON-EDUCATIONAL	EDUCATIONAL	✓	✓	✓	X	X	X	X	X	X	X	X	X
4	NOT IMPORTANT	IMPORTANT	✓	✓	✓	X	X	X	X	X	X	X	X	X
8	CONCENTRATION NOT NECESSARY	CONCENTRATION NECESSARY	✓	✓	✓	X	X	X	X	X	X	X	X	X
1	SUBCONSCIOUS ASSIMILATION	CONSCIOUS PREMEDITATION	✓	✓	✓	X	X	X	X	X	X	X	X	X

CLARE'S FOCUSED GRID

PURPOSES FOR READING

	✓	✓	×	×	FURTHER A HOBBY	MENTAL EDUCATION	ESCAPE FROM REALITY	PHYSICAL RELAXATION	KNOWLEDGE OF LITERATURE	READ TO CHILDREN	ECONOMICS FACTS	CURRENT EVENTS	FOSTER DELUSIONS	ACADEMIC INFORMATION	COURSE
3	NEEDED BY ME		DESIRED BY OTHERS		✓	✓	✓	✓	×	×	×	×	×	×	✓
4	NECESSARY FOR MENTAL HEALTH & HAPPINESS		NECESSARY TO FULFIL AMBITION		✓	✓	✓	✓	✓	✓	×	×	×	×	×
2	PERSONAL DESIRE		OBLIGATION		✓	✓	✓	✓	✓	✓	×	×	×	×	×
1	FULFIL PRACTICAL NEED		SELF-ENRICHMENT		✓	✓	✓	×	✓	×	×	×	×	×	×
4	NEEDING REPOSE		NEEDING AGITATION		✓	✓	✓	✓	✓	×	×		✓	×	×
3	SELF-INDULGENT		MIND OVER MATTER		✓	✓	✓	×	×		×	×	✓	×	×
5	SHARE SOMEONE ELSE'S INTERESTS		PRIVATE INTEREST		✓			×	×	✓	✓	✓		×	×

JOHN'S FOCUSED GRID

PURPOSES FOR READING

			STIMULATE THOUGHT	NEW IDEAS	INFORMATION	BROADEN OUTLOOK	BROADEN VOCABULARY	ENTERTAINMENT	SATISFACTION	ESCAPE BOREDOM	FORCED FOR COURSE	EXAMS
6	MUNDANE	IMAGINATIVE	X		✓	✓	✓	X	X	X	✓	✓
1	A DRAG	ENJOYABLE	X	X	X	X		X		X	✓	✓
2	POINTLESS TO A CERTAIN EXTENT	SENSE OF ACHIEVEMENT	X	X	X	X	X	X				✓
3	NEGATIVE APPROACH	POSITIVE APPROACH	X	X	X	X	X	X	X	✓	✓	✓
5	LAZY ATTITUDE	IN-DEPTH READING	X	X	X	X	X	✓	X	✓	X	✓
4	PASSIVE	CREATIVE	X	X	X		✓	✓	✓		X	

SUE'S FOCUSED GRID

PURPOSES FOR READING

- 6 -

		ESSAY/SEMINAR	SCANNING IN LIBRARY/BOOKSHOP	LIGHT READING FOR RELIEF	AVOIDANCE OF THINGS I SHOULD DO	INCIDENTAL CASUAL	FOR CONSOLATION WHEN DEPRESSED	FIND SOMEONE ON MY WAVELENGTH	UNDERSTAND OTHER'S POINT OF VIEW	CONVERSATION TOPIC	FILM REVIEWING	CURRENT AFFAIRS
GENERAL LIGHT UNRELATED	IMPORTANT PERSONALLY RELEVANT	X	X	X	X	X	X	✓	✓	✓	✓	
PROFESSIONAL READING	EVERYDAY READING	✓	X	X	X	X	X	X	X			
CONSCIOUS TASK ATTITUDE NOT PLEASURE	SPUR OF MOMENT PLEASURE	✓	✓	X	X	X	X	X		✓	✓	✓
IMPORTANT TO USE IN SOCIAL SENSE	NO REAL SOCIAL IMPORTANCE		X	✓	✓	X	X	X	X	✓	✓	✓

- 7 -

SUSAN'S FOCUSED GRID

PURPOSES FOR READING

✓	✓	×	X	EXAMS	TOLD TO	INCREASE KNOWLEDGE	FURTHER STUDIES	OTHER'S VIEWS	INTEREST	DELIBERATE ENJOYMENT	CASUAL ENJOYMENT	PASS TIME
OUGHT TO INCREASE KNOWLEDGE		FOR MYSELF		×	✓	✓	✓			X	X	X
IMPORTANT		UNIMPORTANT		✓	✓	✓	✓	✓		×	X	X
DONT NECESSARILY ENJOY IT		IDEAL ENJOYMENT		✓	✓	✓	✓	✓	×	X	×	×
FOLLOW UP SOMETHING		INTERESTED BUT DONT HAVE TO FOLLOW UP		✓	✓	✓	✓		×	×	X	X
LEARNING TO REPRODUCE		LIGHT READING FOR ENJOYMENT		✓	✓	✓	✓		×	X	X	X
BECAUSE I'VE GOT TO NO UNDERSTANDING OR ENJOYMENT		BECAUSE I WANT TO		✓	✓	×	X	×	X	X	X	X

JULIE'S FOCUSED GRID

PURPOSES FOR READING

- 6 -

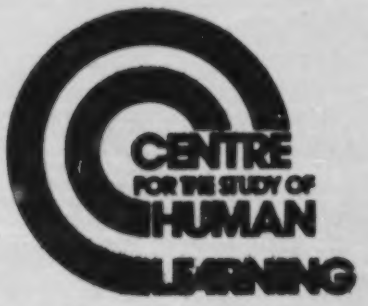
	✓	✓	X	X	NEW IDEAS	STIMULATE THOUGHT	REFLECT ON OWN IDEAS	ENJOYMENT OF SOUNDS	ENJOYMENT OF STORIES	RELAXATION	CURRENT EVENTS	SEMINAR	PART TEXTS NOT SET	SET TEXTS	ESSAY
6	RELAXATION, ESCAPE INTO IMAGINATION TENSION RELEASE		TENSION INDUCING BUT RELAXING AND STIMULATING		X	X	X	✓	✓	✓	✓	X	X	X	X
1	LESS INTERESTING, HAVE TO DO A CERTAIN AMOUNT		GOOD UNDERSTANDING IMPORTANT IN ORDER TO DISCUSS		X	X	X	✓		X			✓	✓	✓
4	READING FOR EXAMS		READING FOR KNOWLEDGE		X	X	X	X	X	X	X		✓	✓	✓
3	EXTERNAL, ABLE TO DISCUSS AND INVOLVE SELF WITH OTHERS		INTERNAL, PERSONAL IMPROVEMENT AND SENSITIVITY		X	X	X	X	X	X	X	✓	✓	✓	✓
5	TASK WORK, A GALLERY OF SOMEONE'S IDEAS		INVOLVES PART OF ME RELEAVING, LESS ABSTRACT		X	X	X	X		X		✓		✓	✓
2	VOLUNTARY WORK RELATED TO COURSE WORK		GOOD UNDERSTANDING IMPORTANT IN ORDER TO DISCUSS AND SHARE		X	X	✓	X	X	X	X	✓	✓	✓	✓

References

1. Thomas, L. F. (1976) Towards Achieving Personal Meaning. Chap.4. Focusing: Exhibiting the meaning in a grid. In Press.

2. Thomas, L. F. & Augstein, E. S. Harri-. (1976) Reference is also made to other Papers within the S.S.R.C. Report: The Self-Organised Learner and the Printed Word.

PROJECT SPONSORED
BY S.S.R.C.



THE SELF-ORGANISED LEARNER
AND
THE PRINTED WORD

PAPER 4 - THE LEARNING CONVERSATION:
FREEDOM TO LEARN

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex.

Laurie F. Thomas

E. Sheila Harri-Augstein.

CONTENTS

Page

1. INTRODUCTION 1

2. PROCEDURE 2

3. RESULTS AND COMMENT 3

3.1. The Repertory Grids 3

3.1.1. Case Study A: Harry Shard..... 3

3.1.2. Case Study B: Joan Saunders..... 8

3.1.3. Case Study C: Peter Knott..... 11

3.1.4. Comparing and Contrasting the Content of Grids... 12

3.2. The Learning Experiences of the Research Team..... 19

3.2.1. Personal View No.1: Cliff McKnight..... 19

3.2.2. Personal View No.2: Laurie Thomas..... 20

3.2.3. Commentary on a Staff Review Session:Fraser Reid 21

4. IMPLICATIONS 23

4.1. The Content of the Course..... 23

4.2. Implications for Learning Conversations..... 24

APPENDIX

REFERENCES

THE LEARNING CONVERSATION:

FREEDOM TO LEARN

1. INTRODUCTION

This is the last of the three studies concerned with developing and evaluating methods for helping students improve their use of reading as a learning skill. A significant feature of the series has been a move from an orthodox experimental design with a structured approach to a conversational research design. Brooklands (B) represents the greatest range of freedom offered both to students and researchers. Whilst rich in possibilities for personal growth, this study highlights the methodological problems raised by the conversational paradigm.

Within the larger project a number of new techniques have been developed. These were essentially tools for raising awareness of the processes of learning. The Brunel Reading Recorder enables the learner to record the process of reading. It records where in the text the reader slows down or hesitates and where they skip forward or search back. These records are used to raise the learner's awareness of his reading behaviour. The Flow Diagram technique is a method for noting down and displaying in a non-linear way the meaning which the reader attributes to the text. The Kelly Repertory Grid is a method for allowing the student to explore his own understanding and motivations; it was used for raising awareness of needs and purposes in learning. The Purpose Taxonomy and Hierarchy encourages the articulation of "Purpose". The former was based on Bloom's Taxonomy of Educational Objectives. The latter depended on the reader's own idiosyncratic needs and purposes. Together, these tools sharpened the reader's awareness of purpose and this became an important starting point for organising effective reading strategies and for evaluating the quality of reading outcomes.

Earlier coursesin the project, which are reported in Papers 2 and 3, offered a "student-centred" approach to learning-to-learn but varied both in their teaching methods and in the content and timetabling of the curriculum. Within the complete series of courses the one here reported was the least structured, in that students were offered freedom to decide which parts of the curriculum they wished to concentrate upon and which of the techniques they chose to use.

In this course the teaching approach was based on a mix of group discussion and individual tuition. This was backed by a few instructional sessions in which the techniques were described and by practicals in which students could select exercises using any of the tools and materials provided.

There was, however, one exception to this general orientation towards freedom of choice. The earlier courses had revealed that students experienced considerable difficulty in differentiating among learning purposes and therefore found it difficult to develop varying and flexible strategies in reading, as these related to different purposes. It was decided to focus on this aspect of Reading-for-Learning by using each student's own learning experiences in a Kelly Repertory Grid. Considerable opportunity was then offered for exploring their understanding of learning and how this related to reading.

The course eventually foundered in its own freedoms, and no short or long term measures of change could be collected. The immediate "measures" focused on the conversational events provoked by the ongoing tutorial experiences. The report therefore reviews:-

(i) the individual repertory grids,

(ii) the research team's learning experiences.

It then explores:-

(iii) the implications for Reading-for-Learning Courses,

and (iv) the development of a more articulated theory of Learning Conversations.

2. PROCEDURE

The students on this course were all attending full-time "A" level courses at a Technical College. Most of them had failed their "A" level exams in the sixth form at school and had been encouraged by their parents to try again. The remainder had chosen to leave school after "O" levels and to attend the technical college because they considered it to be a less restricted and more adult atmosphere in which to pursue their studies. There was, however, a very pervasive feeling of academic failure (i.e. of being second-class learners) about their general attitude to their studies.

The course was timetabled for half a day per week for four weeks, followed by a two-day session in the fifth week. This was followed by six weeks in which participants made individual appointments to use the materials and techniques in practical sessions and/or tutorial sessions to discuss learning difficulties.

The first three hour session was opened with a 20 minute period in which introductions were exchanged. It was briefly explained that the course was part of a research project and that for this reason it was necessary to carry out some initial questionnaire and practical learning-by-reading exercises before the "course proper" could be started in the following week. The pre-test and questionnaire were then administered. These were identical with those used in Study 1 and 2 (Papers 2 and 3).

The second session consisted of a general introduction to the purpose and methods of the course, followed by a more detailed explanation of the Brunel Reading Recorder. Typical "records of reading" obtained on the Recorder were described and students were then helped to analyse and interpret the records of their own efforts to read for learning.

The third session was spent on the Flow Diagram technique.

In the fourth session a group of final year psychology degree students were recruited to conduct individual interviews eliciting a Kelly Repertory Grid. The "elements" in these grids were significant learning events in the participant's life.

The grids were analysed and focused (1) and part of the two days in the fifth week were used to feed back the results of these focused grids and develop a tutorial conversation about learning purposes. The remaining time during the two days was spent in familiarising participants with the tools and techniques and their relationships to each other. Each participant was shown a range of Reading-for-Learning exercises and these were freely available to them. They were asked to arrange weekly appointments over the following six weeks in which to follow-up any questions, ideas, methods or skills that interested them.

This proved to be more freedom and/or choice than most of them were able to exercise. Some, simply wanted to continue the grid conversations, not as they related to reading but as they related to life, education and career. Others, made appointments but needed to be told what exercises to do, and others felt lost or scared by the alternatives and chose not to participate further.

The teaching staff (or research team) consisted of two permanent research members of the Reading-for-Learning project, two post-graduate students pursuing related Learning-to-Learn projects, and a number of final year psychology students. The instructional sessions on the tools and techniques were conducted by the two permanent staff. The grid interviews and feedback sessions were conducted on a one-to-one basis by everybody, and the follow-up sessions were conducted mainly by one of the permanent researchers.

A very relaxed permissive social atmosphere was deliberately developed throughout the whole programme. For example, staff fetched coffee for students during practical exercises and this, as well as their youthfulness and their open approach, were seen as very different from many of the formally oriented permanent subject matter staff of the college. The later part of this report shows that this "unusual in the context" relationship between staff and students had both advantages and disadvantages.

3. Results and Comment

The results of the course as seen from a traditional point of view were disappointing. Attempts to obtain "before" and "after" measures of Reading-for-Learning performance failed because many of the participants became more interested in the counselling aspect of the course; the Kelly Grid and follow-up tutorials. Few of the students did systematic Reading-for-Learning exercises and few took part in the after measures. These were therefore abandoned, except for the Reading Questionnaire. Of the nine factors measured by this questionnaire, only one revealed a significant change. Students became more flexible to their use of reading as a learning skill, (very highly significant, .0001% (chi square = 62.5)). This could be related to the emphasis that had been placed on the discussion of purposes, which had gone on throughout the course.

Follow-up of academic performance was not pursued, as many of the participants revealed very ambivalent attitudes to the "A" level orientation of their studies during the tutorial sessions.

However, great interest among staff was aroused by the effects of the course on the students. Requests were received both for repeats of the course and for a course for staff. These requests were taken to be indications of "results" which were not amenable to the "before" and "after" measuring devices, which had been planned into the study.

The repertory grids, and the conversational learning experiences of the research team, follow.

3.1. The Repertory Grids

The repertory grid was used to help students explore their attitudes towards learning. The participant investigator introduced each individual elicitation with a conversational opening based on the following statement:-

> "I want you to think of any events which have had a real impact on you; in which you have learned something. It can be positive or negative and it can be any kind of event in formal education or outside".

The conversation following this statement defined the universe of discourse. Anything up to three quarters of an hour was spent in negotiating the elements, which were obviously unique to each student. The procedure for completing grids is described elsewhere in the report (Paper 3). Each completed grid was re-sorted, using a two way cluster analysis which re-orders the elements and constructs, so that like proximates to like (1). This 'focuses' the pattern of meaning in the grid. Three of the nine focused grids are examined in detail. The remaining six focused grids are offered to exhibit the range of clustered elements, constructs, and patterns of meaning. A comparison of all nine grids is attempted.

3.1.1. Case Study A: Harry Shard

Harry Shard's grid (Table 1) has been selected as the first case study because it is relatively simple, having only nine elements and six constructs. The first stage in looking at a grid is to familiarise oneself with the elements. Have they been elicited or were they offered to the participant subject? Do the few words on the page represent some unique personal event or is the element a public statement to which a conglomerate mix of personal experience has been attached?

Harry's first element E1 (last in the focused grid, Table 1) might have been "a short course" and he might have been trying to generalise his ideas about opportunities for learning by comparing and contrasting it with "a trip abroad", "learning from music" and "personal adventures". It is easy for an observer to read elements E1, E2, E4 and E7 in this way; but to do so is to already assume that we know how Harry experienced what he means when he writes down:-

E1 A highly condensed history course with an enthusiastic young teacher who generated great enthusiasm.

E2 A month visit to Finland.

✓ ✓ × X

		NEAR DEATH IN A DINGHY	SHORT SIGHTED MADE ME GIVE UP PLAYING FOOTBALL FOR TEAM	LEARNING HOW TO AVOID TROUBLE WHEN IN EARLY TEENS	DETERMINED TO ENDURE EDUCATIONAL SYSTEM TO OBTAIN AMBITION IN ELECTRONICS	INTEREST IN ELECTRONICS INSPIRED BY PASTOR	MUSICAL OUTLOOK BROADENED BY DEEP PURPLE	A MONTH VISIT TO FINLAND	COMING TO BROOKLANDS GAVE ME A SURPRISED FREEDOM	A HIGHLY CONDENSED HISTORY COURSE WITH AN ENTHUSIASTIC YOUNG TEACHER
INDIVIDUAL ACTIVITY ..LOOKING AFTER MYSELF ... SELF-RELIANCE	GROUP ACTIVITY	✓			✓	✓	✓	✓	×	X
SPONTANEOUS ACTIVITY	CONSIDERED ACTIVITY	✓	×		X	✓	✓	✓	X	X
TENSE	RELAXED	✓	✓	✓		×	X	X	X	X
GRUDGE AGAINST A PERSON	NO GRUDGE	✓	✓	✓	X	X	X	X	X	X
EXTERNAL EVENTS (..NO CONTROL) IMPINGING ON EMOTIONS	EMOTIONS INTERNALLY GENERATED-CONTROL	✓	✓		X	X	×		✓	×
INTELLECTUAL FREAK OUT (..NO USE)	GREAT USE OF INTELLECT	✓		X	X	X	X	✓	✓	

Table 1 LEARNING EVENTS - MARY SEARD'S GRID

E4 Near death in a dinghy.

E7 Musical Outlook broadened by "Deep Purple".

If we look at the elements on the extreme ends of the focused grid, E4 "Dinghy" and E1 "Course" are rated extremely differently (Σdiff = 21) on Harry's constructs. The dinghy incident is rated ✓ on all six constructs. By reading down the left hand (1) pole descriptions we begin to glimpse some of the terms in which Harry was thinking about this incident during the elicitation conversation. Reading down the right hand pole descriptions gives an idea of how he thought about "the history course experience", keeping in mind that his ratings for it were -

X X X X x o
5, 5, 5, 5, 4, 3.

The 3 is interesting, despite the positive verbal description of this element using words like enthusiasm, he sees it as neutral on -

Intellectual freak-out [No use] v Great use of intellect

One of the lessons to be learned from reading grids is that ideas and values which go together in the reader's mind do not necessarily do so in the author of the grid. Often, in retrospect, one wonders why certain ideas, values and events (constructs and elements) were not represented during the elicitation conversation. Sometimes the omission lies in the particular path taken by the conversation, i.e. in poor mutual control of the conversational process. Often the ideas are not there because they do not loom large in the participant subject's ordinary thoughts and feelings. Harry might well have been able to rate all his elements on a scale:-

good learning experience v bad learning experience

but the fact that he did not spontaneously offer it as a construct even within the context of a conversation about "learning", is significant to our understanding of Harry.

The "visit to Finland" (E8) lies half way between dinghy (E4) and course (E1). Like the "course" (E1) it is "Relaxed" and "No grudge" but like the "dinghy incident" (E4) it is -

Individual activity, looking after myself, self-reliance.

Spontaneous activity,

and Intellectual freak out.

A gradual easing of oneself into the grid begins to offer some insights into Harry's construing of significant learning experiences. If we now begin to look at 'what goes with what' in Harry's thoughts and feelings we see that among the elements:-

E5 Interest in electronics inspired by father

and E7 Musical outlook broadened by "Deep Purple"

are rated similarly (Σ diff = 4) matching on two constructs and only mismatching by one point the other four.

E6 Short eyesight made me give up playing football for a team

and E3 Learning to avoid trouble when in early teens,

are also similar to each other (Σdiff = 5). Among Harry's constructs -

C4 Tense v Relaxed

and C6 Grudge against a person v No grudge

are highly related (Σdiff = 5).

The meaning of C4 and C6 is further illuminated when we realise that they group -

E4, E6 and E3 -	in contrast to	E9, E5, E7, E2, E8 and E1
Near Death in Dinghy		Education for electronics
		Interest inspired by father
Short eyesight, give up football		Deep Purple
		Finland
Avoid trouble in teens		Technical College
		History Course

The ratings of the elements on a construct cluster add specific meaning to the verbal descriptions of its poles, i.e.:-

Element	Combined Rating	2 Constructs Clustered	Average Rating
E4 Near Death in Dinghy	(1 + 1)	External Events (no control) emotional Intellectual Freakout	1
E8 Going to Tech. College	(1 + 2)		
E2 Visit to Finland E6 Short eyesight: give up football	(1 + 3)		2
E1 History Course	(3 + 4)		3
E3 Avoid trouble in teens	(3 + 5)		4
E7 Deep Purple	(4 + 5)		
E5 Electronic inspired by father	(5 + 5)	Emotion internally generated (control)	5
E9 Endure Education for electronics	(5 + 5)	Great use of intellect	

Conversely the ratings of an element on all constructs add personal meaning to its verbal description, i.e. -

"Musical Outlook Broadened by Deep Purple",

is constructively defined by:-

1. very spontaneous activity;
2. individual activity: looking after myself: self reliance;
4. emotion internally generated (control);
5. very great use of intellect;
5. no grudge at all;
5. very relaxed.

Thus, by moving backwards and forwards between elements and constructs; seeing the construct in terms of the ordering of the elements and the elements in terms of its rating on the constructs, the pattern of meaning in the focused grid can be surveyed.

✓ ✓ × ✗

		LEARN MORE IN INFORMAL DISCUSSION WITH FRIENDS	INTERESTING PEOPLE HAVE A POSITIVE EFFECT	MEETING MARC BOLAN	SMALLER CLASSES + INTERESTING TEACHERS HELP	NURSERY SCHOOL AFFECTED MY SHYNESS	PARENTS TAKING AN INTEREST IN SCHOOL BOOKS FOR READING	RELATIONSHIP WITH FATHER STIMULATES	READING BOOKS RELATED TO CURRICULUM	DISLIKE OF CONFORMING TO SYLLABUS	TEACHERS + PARENTS FORCING ME MADE NEGATIVE REACTION	BEING SUBJECTED TO AUTHORITY HAS NEGATIVE EFFECT
SELF ORGANISED	SOMEONE ELSE TELLING YOU WHATTO DO	✓	✓	×		✗	✗	✓	✓	✗	✗	✗
SAME GENERATION	OLDER GENERATION	✓	✓	✓	✓		×	✗	×	×	✗	✗
OPEN..FREE..TALK ABOUT WHAT I LIKE	NOT FREE TO SAY WHAT I LIKE.. ON GUARD	✓	✓	✓		✓		✗	×		×	✗
AFFECTED ATTITUDE TO LIFE POSITIVELY.GENERATION GAP ETC.	AFFECTED ATTITUDES NEGATIVELY	✓	✓	✓	✓	✓	✓	✓			✗	✗
IF INTERESTED HAS MORE POSITIVE EFFECT	IF NOT INTERESTED HAS A NEGATIVE EFFECT	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✗
TAKE NOTICE OF AND LEARN	PUT OFF + NOT REMEMBER	✓	✓	✓	✓	✓		✓	✗	✗	✓	✓
MORE RELATED TO LIFE IN GENERAL	RELATED PARTICULARLY TO SCHOOL	✓	✓	✓	✗		✗		✗	✗	✓	✓

Table 2 LEARNING EVENTS: JOAN SAUNDERS' GRID

3.1.2. Case Study B - Joan Saunders

This student offered eleven elements and seven constructs (Table 2). The elements define a segment of Joan's experiential world. "Meeting Marc Bolan", "Nursery School" and "Relationship with Father", begin to offer some insight into her meaning. Reading the seven constructs further illuminates this.

Her elements are not too well defined. The elicitation conversation should have led Joan into a more precise specification of particular events. Even so, the simplicity and weight of her thoughts and feelings produced a clearly focused grid in which one large area of ✓'s and one of X's predominate. This overall dichotomy is only slightly relieved by the ✓'s down in the right hand bottom corner and the interspersal of ✓'s and X's on the top row.

Joan's elements focused into four major clusters:-

E1 Learn More in Informal Discussion With Friends

E8 Interesting People Have a Positive E

E3 Meeting Marc Bolan

E9 Smaller Classes and Interesting Teachers Help

E5 Nursery School Affected My Shyness

E4 Parents Taking an Interest in School Books for Reading

E2 Relationship with Father Stimulates

E6 Reading Books Related to Curriculum

E11 Dislike of Conforming to Syllabus

E 7 Teachers and Parents Forcing Me Made Negative Reaction

E10 Being Subjected to Authority Has Negative Effect

and her constructs clustered into three major groups:-

C2 Self Organised

C1 Same Generation

C5 Open Free Talk About What I Like

C7 Affected Attitude to Life Positively. Generation Gap etc.

C3 If Interested Has More Positive Effect

C6 Take Notice of And Learn

C4 More Related To Life In General

The left hand pole of each construct was seen as positive and the right hand pole as negative.

The three elements:-

E1 Learn More in Informal Discussion With Friends

E8 Interesting People Have A Positive Effect

E3 Meeting Marc Bolan

were all seen very positively (with the exception of "Meeting Marc Bolan" not being "self-organised"). They were rated:-

2	self-organised
1	same generation
5	open, free, talk about what I like
7	Affected attitude to life Positively, Generation gap etc.
3	If interested has more positive effect
6	Take notice of and Learn
4	More related to life in general

Near the other end:-

E 6 Reading Books Related to Curriculum

E11 Dislike Of Conforming To Syllabus

were seen as:-

2	Someone else telling you what to do
1	Older Generation
5	Not free to say what I like: On Guard
7	Affected attitudes negatively
3	If not interested has a negative effect
6	Put off and not remember
4	Related particularly to school

and E 7 Teachers and Parents Forcing Me Made Negative Reaction

E10 Being Subjected To Authority Has Negative Effect

shared this negative rating, although they were seen as:-

C6 Take Notice of And Learn

C4 More Related To Life In General

A subsequent learning conversation taking off from the focused grid, produced a very fruitful and detailed exploration of the meaning of education and learning and her aspirations in life.

✓ ✓ ✗ X

		FAILING R.A.F. MEDICAL	MOVING CANADA	POETRY EVENING. OTHER PEOPLES IDEA OF LIFE	CHEMICAL WARFARE.. KNOWLEDGE OF DANGERS.	MOTOR CLUB. LEARNING TO DRIVE	VISIT TO LONDON AIRPORT	GLIDING ..OVERCOMING THE ODDS	HEAD JOY ..AUTHORITY HELD	HOLIDAY IN GERMANY	SCHOOL COUNCIL.. CONDUCTING DEBATES	READING BIBLE IN CHURCH	TURNING ME ON TO GOD	KIM PHILBY ..HIDDEN FEARS IN PEOPLE	HISTORY LECTURES..WHAT A WASTE OF TIME
SOMETHING NEW ABOUT MYSELF	ALREADY KNOWING	✓			✓	✓	✓	✓	✓			X	X	✗	✗
FLYING	GROUND	✓	✗	X	✓	✓	✓	✓	✓	✓	X			X	X
KNOWING WHAT IT IS ALL ABOUT	NOT REALLY KNOWING	✓	X	✗	X	✓	✓	✓	✓				✓	✓	✓
OVERCOMING A WORRY	RECEIVING A WORRY	X		✗	✗	✓	✓	✓	✓	✓	✓		✓	✗	
SPEAKING OUT	SILENT MAJORITY	✗	✗	X	X	✓	✓		✓		✓	✓		✗	
LEARNING ABOUT PEOPLE	LEARNING ABOUT LIFE	✗	✗	X	X		✓	✓	✓	✓	✓	✗	✗	✓	X
MOVING FROM ONE COUNTRY TO ANOTHER	STATIONARY	✓	✓	X	✗	X	✗	✓	✓	✓			✗		X
IF EAST AND WEST WENT TO WAR SERIOUS DISASTER COULD RESULT	ADVENTURE WHICH IS SAFE	✓		✓	✓	X	✗	X	✗	✓		✗	✗	✓	
FEAR IN COMING INTO SOMETHING NEW	CONFIDENCE IN MY JOB	✓	✓	✓	✗	✗	✗	✗	X		✗		✓	✓	
RECEIVING SOMETHING	GIVING SOMETHING		✓	✓	✓	✓	✓		✗		✗	X	✓	✓	✓
PLEASURE IN READING AND SEEING	WORK THAT GOES WITH THE JOB			✓	✓	✓		✗		✓	X		✓	✓	X

Table 3 LEARNING EVENTS: PETER KNOTT'S GRID

3.1.3. Case Study C - Peter Knott

Both Harry Shard's and Joan Saunders' grids were very simple. They were chosen to introduce the reader to the interpretation of grids. Peter Knott has an elicitation conversation in which he became very involved and ended up having offered fourteen elements and eleven constructs (Table 3). Briefly inspecting the grid:-

Five elements clustered quite closely together

E 7 Motor Club, learning to drive

E10 Careers visit to London Airport

E14 Gliding overcoming the odds

E 5 Head boy authority I held

E11 Holiday in Germany.

With certain significant exceptions these tended to be:-

C 9 Finding something new about myself

C11 Flying

C 7 Knowing what it is all about

C 4 Overcoming a worry

C 6 Speaking out

C 1 Adventure which is safe

C 2 Confidence in my job, feeling of being in command.

These contrasted with:-

E 3 Poetry Evening		E12 Reading Bible in Church
	and	E 4 Godspell
E 1 Chemical Warfare		E13 Kim Philling

As one explores this grid, a number of points emerge. It is much more differentiated than either Harry's or Joan's, i.e. it contains a more complex pattern of meaning; the meanings are more articulated. For Peter, significant learning has little to do with education. There are five groups of constructs:-

C9, C11

C7, C4, C6

C8, C10

C1, C2

C3, C5.

But the elements are quite differentiated:-

E6, E2, E9 and E8 are each rather different from their neighbours and only

E3 and E1

E7, E10, E14, E5, E11

and E12, E4, E13 can properly be seen as clusters.

Another six grids from the same study are offered for interpretation without comment (Appendix).

3.1.4. Comparing and Contrasting the Content of Grids

The repertory grid can be used in may different ways. As an individual case study method it enables the researcher to systematically explore a student's thinking and feeling around a central topic or within one universe of discourse. As such it is a tutorial tool of some considerable power, since it allows the elicitation of a whole series of experiences piecemeal but organises and displays them for the tutee to consider three by three in relation one to another. The results (elements, constructs and responses) are all entered onto one grid where they represent coherent patterns of relationships and meaning. The meaning is not in the grid. It is in the head of the tutee. This is why grids seem both exciting and yet somehow rather more diluted than one would expect. The words in the grid are only pale reflections of the experience in the head. But for the tutee they are sufficient to tap the original experience.

The three case studies which have been discussed illustrate this use of the grid. The remaining focused grids in the Appendix have offered the reader an opportunity to explore grid material further. This sub-section compares and contrasts the material from all of these nine grids.

When a teacher is aware of some general problem among a group of students, grids elicited from them can be used to map out the extent and nature of the issues involved. The grid has certain experiential advantages over the more seemingly objective techniques of questionnaire and semantic differential. Questionnaires force the subject to constrain his thoughts and feelings within the range of questions which the experimenter thinks fit to ask. This means that crucial aspects of the problem often remain untapped. The repertory grid, on the other hand, forces the participant to explore the terms in which he is himself thinking and feeling about the problem.

When the teacher or researcher wants a consensus view of the problem, this is achieved by construing the construings. It is as well to make this process explicit. The process of construing another's construings is the nature of all human communication. Conversation works or founders on how well each conversationalist is able to test the validity of his interpretations and upon how well each is able to tolerate and recognise the inevitable distorting selection and changes in emphasis that go on during an exchange. This highlights the essential subjectivity of grid information and the need for a strict methodology to control the elicitation and feedback conversations. Equally, it highlights the subjectivity of the researcher's interpretations.

In this study the elements were individually elicited, giving 102 different learning experiences from nine subjects. Each element was written on a card and distributed "randomly" on a large plane surface. Investigators sorted them into groupings and clusters, keeping notes and continually re-distributing the cards. The notes were then compared to evoke a series of "investigators' constructs". These emerged from the interaction of the investigators' purpose and the free-flowing data.

After considerable exploration and discussion, six shared dimensions were agreed from within a much more varied range of possibilities. Some very inadequate ideas of the range of constructs possible is given by the constructs contained in the nine original grids. Some constructs were discarded because they were too vague, others because there were not enough elements that warranted their use; others were discarded because although interesting and related to the data, they appeared unlikely to yield evidence related to the purpose of the investigation. However, a note of these discarded constructs was often a rich source of further discussion in counselling students.

When the six "dimensions" were agreed, the investigators individually applied each one in turn to all 102 elements. The separate construings of the investigators were then compared and "disagreements" discussed and reconstrued. This process led to a refining and some redefining of constructs. For example, the original description of:-

"emotional v cognitive learning"

was refined into a triple categorisation:-

"attitude, intellectual and social skill learning"

and :- "challenging positively v challenging negatively"

became:- "good experiences (exciting) v bad experience" (anxious and disruptive).

Some of the individual elements have also offered problems:

For example:- is "leaving school" a "school" experience?

General agreement among investigators was arrived at fairly easily for most elements and after negotiation, unanimously for each element on each construct. The subject's own construing of his elements was always used as a guide to the implied personal meaning.

Table 4 shows the six dimensions and a raw frequency count of the number of elements in each sub-category.

Dimension 1

Category	Freq.	Abrev.
School*	28	Sch
Peers	19	Prs
Events	17	Evts
Media	16	Mda
Family	13	Fam
Miscell.	9	Msc
total	102	

Dimension 2

Category	Freq.	Abrev.
Learning alone	49	Al
Learning with others	53	Oth
total	102	

Dimension 3

Category	Freq.	Abrev.
Felt free during learning	53	Free
Neutral	14	N
Felt constrained during learning	35	Constr.
total	102	

Dimension 4

Category	Freq.	Abrev.
Good Experience (exciting)	55	Exc.
Neutral	5	N
Bad experience(anxious and disruptive)	42	anx
total	102	

Dimension 5

Category	Freq.	Abrev.
Learning;positively valued retrospectively	54	V+
Neutral	23	N
Learning-negatively valued retrospectively	25	V-
total	102	

Dimension 6

Category	Freq.	Abrev.
Intellectual Learning	19*	Intell
Social skill Learning	16	Soc
Attitudinal Learning	67	
total	102	

Table 4 DISTRIBUTION OF ELEMENTS ON EACH RESEARCHER CONSTRUCT

Since the dimensions were invented to differentiate among the elements, great circumspection should be exercised in attributing too much absolute meaning to these numbers. Category definitions tend to have been set to distribute the elements fairly evenly among them. However, the proportion (28%) of "school" (i.e. educational) elements is rather low, given the opening remarks of the elicitation conversation; and the proportion of intellectual (19%) as against attitudinal learning (66%) is perhaps also surprisingly low. It should be remembered that these elements represent "what have been important learning experiences in my life". Most of the other frequency counts are unexceptional. The neutral 23% in C5 include many experiences which had to be endured. They were neither positive nor negative but they were significant.

It is the relationships between frequencies of the elements in the investigator's dimensions of construing that yield some interesting results.

For example, in Table 5 nineteen of the twenty-five negatively valued events occurred whilst learning alone, whereas of the fifty-four positively valued events thirty-six occurred whilst learning with others.

	Negatively valued	Neutral	Positively valued	Total
Learning alone	19*	12	18	49
Learning with others	6	11	36*	53
Total	25	23	54	102

Table 5 NEGATIVELY v POSITIVELY VALUED LEARNING EVENTS COMPARED IN TERMS OF LEARNING ALONE v LEARNING WITH OTHERS

In Table 6 the attitudinal learning shows an equal distribution of positively and negatively valued events, whereas intellectual and social skill learning are more positively weighted.

	Negatively valued	Neutral	Positively valued	Total
Intellectual	2	3	14	19
Social Skill	1	1	14	16
Attitudinal	22	19	26	67
Total	25	23	54	102

Table 6 "TYPE OF LEARNING" COMPARED WITH "POSITIVELY OR NEGATIVELY VALUED"

Table 7 shows an interesting characteristic of this attitudinal learning. Much of the learning done "alone" was experienced negatively, whereas the positively valued learning was mostly done with "others".

	Negatively valued	Neutral	Positively valued	Total
Alone	17*	9	10	36
With others	5	10	16*	31
Total	22	19	26	67

Table 7 A COMPARISON OF "POSITIVELY AND NEGATIVELY VALUED EVENTS WITH LEARNING ALONE OR WITH OTHERS' FOR ATTITUDINAL LEARNING

Good exciting experiences tend to produce learning which is positively valued in retrospect, and bad, anxious and disruptive experiences tend to lead to learning which is negatively valued in retrospect (Table 8).

	Negatively valued	Neutral	Positively valued	Total
Exciting	0	4	51*	55
Neutral	1	4	0	5
Anxious	24*	15	3	42
Total	25	23	54	102

Table 8 POSITIVELY AND NEGATIVELY VALUED EVENTS COMPARED FOR 'ANXIOUS v EXCITING'

When the dimension (3) 'felt free' and 'felt constrained' is added to the data in table 8, Table 9 shows that 'felt free' is 'positive' and 'felt constrained' is 'negative'.

	Exciting	Neutral	Anxious	Total
Felt free	45*	0	8	53
Neutral	7	1	6	14
Felt Constrained	3	4	28*	35
Total	55	5	42	102

Table 9 'ANXIOUS v EXCITING' COMPARED TO 'FELT FREE v FELT CONSTRAINED'

Table 10 illustrates some of the learning events which deviate from the trend in table 9.

	Exciting but not free	Anxious but not constrained
Positively valued	Godspell turning me on to the words of God.	Getting in very late one evening when I was 13.
	Learning from a field course through direct experience and enjoyment.	Realising it was a habit to be going out with a certain bloke.
Neutral	1st day at Junior School with North Country Teacher.	Seeing man possibly drunk. Argument in Family. Splitting up.
Negatively valued		Jealousy of teacher's knowledge. R.A.F. Medical realising my ambitions would not come about. Friends getting married.

Table 10 EXCEPTIONS TO THE RULE.

Table 11 shows that negatively valued attitudinal changes tend to take place during experiences in which the subject felt constrained and positively valued attitudinal learning tends to take place during experiences in which people feel free.

	Negatively valued	Neutral	Positively valued	Total
Felt free	3	5	23*	31
Neutral	4	3	3	10
Felt constrained	15*	11	0	26
Total	22	19	26	67

Table 11 ATTITUDINAL CHANGES WHICH WERE 'POSITIVELY OR NEGATIVELY VALUED' COMPARED FOR 'FELT FREE v FELT CONSTRAINED'

When the 'school' learning experiences are examined a number of interesting comments on these students' attitudes towards academic learning can be made. In Table 12 'school' shows an exceptionally high proportion of negatively valued learning.

	Negatively valued	Neutral	Positively valued	Total
School	13*	4	11	28
Peers	3	5	11	19
Events	3	3	11	17
Media	1	4	11	16
Family	1	5	7	13
Miscellaneous	4	2	3	9
Total	25	23	54	102

Table 12 'SCHOOL EVENTS v OTHER TYPES' COMPARED FOR 'POSITIVELY AND NEGATIVELY VALUED'.

In Table 13 there is a clear indication that negatively valued learning takes place whilst people feel alone and positively valued learning takes place whilst they feel themselves to be working with others.

	Negatively valued	Neutral	Positively valued	Total
Alone	12*	2	2	16
With others	1	2	9*	12
Total	13	4	11	28

Table 13 SCHOOL EVENTS: 'LEARNING ALONE v LEARNING WITH OTHERS' COMPARED FOR 'POSITIVELY v NEGATIVELY VALUED'.

Within School, two thirds of all retrospectively valued learning is attitudinal and nearly three fifths of this is negatively valued, (Table 14).

	Negatively valued	Neutral	Positively valued	Total
Intellectual	2	1	2	5
Social skill	-	-	5	5
Attitudinal	11*	3	4	18
Total	13	4	11	28

Table 14 SCHOOL EVENTS: 'TYPE OF LEARNING' COMPARED FOR 'POSITIVELY v NEGATIVELY VALUED'.

This is emphasised when we compared "school" with "remainder" on the attitudinal elements. Table 15 shows that when learning alone, three quarters of the "school" events are negative, whilst half the "remainder" are positive.

	Negatively valued	Neutral	Positively valued	Total
School	11*	3	4	18
Remainder	11	16	22*	49
Total	22	19	26	67

Table 15 : ATTITUDINAL EVENTS: SCHOOL v REMAINDER COMPARED FOR 'POSITIVELY v NEGATIVELY VALUED'

Whereas in Table 16 the "learning with others" is much more positively valued in "school" and "outside".

Thus, most of the negatively valued school experiences are seen to be attitudinal and largely connected with "feeling alone".

"Alone"	Negatively valued	Neutral	Positively valued	Total
School	12*	2	2	16
Remainder	7	10	16*	33
Total	19	12	18	49
"With others"				
School	1	2	9	12
Remainder	5	9	27	41
Total	6	11	36	53

Table 16 : LEARNING EVENTS: A THREE WAY CLASSIFICATION

Finally, if "school" and "peers" are compared for all learning experiences, Table 17 shows that most "peer" learning is positively valued.

	Negatively valued	Neutral	Positively valued	Total
School	13	4	11	28
Peers	3	5	11	19
Total	16	9	22	47

Table 17 : "SCHOOL v PEERS" COMPARED FOR "POSITIVELY AND NEGATIVELY VALUED"

These Tables (4 - 17) show that a careful use of grids can reveal the scope of the problem in a group. Reference back and forward between "group" findings and individual grids allows the usual criticism of statistical studies to be avoided. Whilst the averages may apply to no member of the group, the individual grids can be used to understand the connections.

To summarise, the grids reveal how each individual thinks and feels about his or her experiences. The trend is for school or educational experiences to have been bad. They are overwhelmingly attitudinal as against intellectual. The bad school experiences are remembered as occurring when the participant felt alone and anxious. Experiences outside education are much more positively valued.

3.2. The Learning Experiences of the Research Team

The major impacts of this study were twofold. Firstly, on the staff of the Technical College and secondly, on the group who ran the course. The first of these is outside the scope of this paper. Basically, the idea of learning skill and of learning-to-learn courses caught the imagination of some of the staff who are following up the idea in various ways that are more appropriate to their setting. The impact of the course on the researchers responsible for running it was also considerable.

This "conversational experience" is difficult to report and review. The method chosen is to offer two personal reminiscences, and a commentary on one staff review session. These form the basis for a more systematic review of the idea of a Tutorial Learning Conversation, dealt with in the Implications Section.

3.2.1. Personal View No.1: Cliff McKnight

My involvement at Brooklands was largely a chance matter. During the Summer of 1972 I was working in the Centre for the Study of Human Learning, carrying out a project as part of my degree studies. I offered my services for the Learning-to-Learn course, anticipating my role to be one of equipment transporter or the like, but found myself accepted into the group of 'experimenters'. At that time, I had encountered the Brunel Reading Recorder, the Flow Diagram technique, and the Purpose Taxonomy, but was most involved with the Kelly Repertory Grid which I was using in my own research. I was of the opinion that all three techniques, and the grid in particular, were capable of tapping meaningful psychological processes.

At the first meeting with the students, I was struck by several factors. The most obvious factor was that I was a product of similar circumstances in that I had 'failed' at school and had undertaken technical college education. Also, my age was closer to the students than to at least half the experimenters, since I was only a few years older than most of the students. Furthermore, the experimenters who had planned the course appeared very willing to react flexibly to the changing demands of the participants. Hence, I found myself in an ambiguous situation in which I felt attracted toward both groups. This was particularly accentuated by the fact that I was able to 'speak the language' of both groups to a large extent, but to speak either language in 'mixed' company was inappropriate. In retrospect, I realise that both groups probably also saw my situation as ambiguous.

This is a slightly idealised picture, however, since it treats both groups as homogenous. In reality, there were some students and experimenters with whom I felt no contact. For example, one student seemed interested in nothing but football, and my detestation of sport therefore produced antagonism between us. Eliciting a grid from this student proved impossible. Although my confidence was shaken, it was only a temporary effect, largely because I had elicited a grid prior to this one in which the subject had become very involved. One of the most confidence-shaking experiences of the whole course was attempting to elicit a grid from a girl who was antagonistic toward both the learning experience offered and the experimenters. For me, this experience accentuated the point that the 'subject' must be involved with the experience - the corollary to which was a feeling that if we as experimenters were asking for such involvement, then we

should be prepared to give the same involvement in return. In particular, it seemed ridiculous that we should arrive at the college at 1.00, leave at 4.30, and expect everything to happen between these times. It felt as though we were saying "I will only take you seriously until 4.30", which at the time felt extremely unsatisfactory.

I did very little work with the Reading Recorder until the two-day session. At this time I had the opportunity to observe one of the other experimenters work with several students in interpreting their records. I was most impressed with the way this experimenter could talk a person back into their reading experience via the record, and my belief in the tools was strengthened.

Since I believed in the tools, I was not really surprised when one of the girls wanted to continue talking after having her grid 'fed back'. In view of my feelings about reciprocal involvement, I was only too happy to continue the conversation; if we were to spark off personal change (which we had broadened the definition of learning to include) then we should help the person through this change. However, since the conversation continued for several hours, long into the night, some of the experimenters felt that it exceeded the bounds of 'professional involvement'. Thereafter, the pressures were against extended, deep conversations.

At the time, I felt that the meaningful conversations which took place did so as a direct result of the tools. I also felt that if one wanted to use such tools then one should be prepared to accept the consequences. Although the course was successful in many terms (e.g. the staff of the college later requested a similar course for themselves), I felt that it failed to the extent that some experimenters refused to take responsibility for using some of the tools, while others wanted to take responsibility but could not fully use the tools.

3.2.2. Personal View No.2: Laurie Thomas

This study was a traumatic event for me, which made me confront many of my existing assumptions about the nature of Learning-to-Learn.

My overall impression is retrospectively one of loss of control. I was concerned that the pre-planned timetable should be adhered to and that the pre-course and post-course measures should be obtained. I was also totally convinced, that the course should be student-centred and that students should be encouraged to clarify, define and pursue their own purposes.

The first three or four weekly half-days went more or less according to plan. The students were prepared to go along with our plans, sit our "tests" and fill in our questionnaires. But, there was quite a lot of absenteeism (which we did not experience at Loughborough or Gipsy Hill) but by persevering and making special appointments we were able to get most of the necessary pre-course measures.

As we began to introduce the tools, there was an increasing amount of negative behaviour and comment. The relaxed atmosphere and fairly free interchanges between students and staff did little to dispel this. In fact, in retrospect, it would seem that the unexpected opportunity to "really talk" provided a lightening conductor through which some very powerful and central attitudes were released.

I was in a real dilemma at this stage, wanting to keep the form of the course as planned and yet faced with a demand to "explore life and career problems and not play about with the academic "reading rubbish". On the other hand, the students' attitudes towards us as people was very positive and they were willing to go through the motions of doing the exercise "to help your research".

The introduction of the one-to-one elicitation of the Kelly repertory grid about "learning events" was the crunch event. My research team were very concerned that the personal constructs elicited should be non-trivial, i.e. important to the central thoughts and feelings of the person from whom they were elicited. To the end they developed learning conversations in which the student

was encouraged to explore "those events that really do seem to have produced some lasting impression or change". The elicitation procedure was relaxed and informal; conversation continued for some time after the formal grid had been completed. In some cases the conversations went on from 2.00 p.m. to 4.00 a.m. the next morning. This worried me considerably, as I felt that this was "unethical" and likely to blur the whole role-relationship. On the other hand, the discussions seemed to be very important to some of the students and my student-centred assumptions were put under some stress at this stage. A confrontation between the research team after the two days, led to a review of the whole purpose of the course and the research design. I wanted to continue the Reading-for-Learning activities. I wanted the students to try the tools which I had spent some years developing and I wanted to obtain comparable data.

Whilst sympathising with my problems, the other researchers felt that action research was about the real problems of these students and the opportunity to discuss and explore these was much more likely to help them. We compromised by setting up individual interview-cum-practical sessions in which the student could choose what to do but would be encouraged to do Reading-for-Learning activities. I felt quite let down by the almost universal choice of everybody else's students to discuss life and career plans and how "A" level related, or more often seemed not to relate, to these.

My thinking about education and learning purposes was considerably influenced by this event.

3.2.3. Commentary on a Staff Review Session: Fraser Reid

The following is a summary of the content of a research team review session of the Brooklands Reading-for-Learning course. I have omitted all those things that I see as process phenomena except where they contribute directly to the meaning of the content discussion, e.g. questions. I realise that in summarising, I could introduce my own bias in describing the tape record but, other than an entire transcript (and even then) this seems a good enough alternative. Paragraphing corresponds roughly to pauses in the discussion process, and not necessarily to content discontinuities. C says "the account falls into 2 categories: the theoretical parts whose implications he doesn't fully understand, and actual things relating to what he knows he does". F suggests "a separation between an account of what went on and theory" but C says "it's more that there are bits to which he can relate and bits to which he cannot". C refers to F's comments on feedback and says that he does just that, i.e. gets the person to argue with the grid feedback. (F asks whether feedback is an example of what should be discussed or a topic for discussion, at which T asks what F wants in the way of feedback about Brooklands.) F says that what he wants are illustrative instances of the conversational model, as the only things he remembers are negative events. T opens by referring to the opening session of the course, saying that might be the first example of negotiating a language; to which C says "we were more exhibiting ourselves than negotiating" and F "that it was a necessary event prior to negotiation taking place".

C talks about his first elicitation, saying that negotiation proceeded from being explicit about nervousness, and then to the identifying of shared experiences, and much later, introducing the grid. F asks C how he handled the constraint of having to do a grid. C says that everybody knew that the interaction had a purpose, cos LFT had said so in the large group discussion. C goes on to say that his 3 elicitations formed a scale running from nothing (no response), through a reasonable task-oriented grid, to a conversation that gushed.

F asks C about the first elicitation in which there was no response. C says that she didn't want to do it so he shelved the grid and tried instead just talking to her about her school and family; he says "at times it felt more like an interrogation where she just answered his questions and never took the initiative in the conversation". N says "that's like responding to teacher, to talk only when asked a question". C: "her friends didn't talk much anyway." T suggests that in that situation he should try talking about how she feels in the present. N points out that with a situation like that you can't push up the

pressure cos they close even more. T says that there is always a key and suggests that a real show of emotion is the only way. C replies that the only key is a matching of purposes but that she wanted him to withdraw. No says that from that point of view the interaction was a success, and that C swung over to her purposes; she wanted you to go away, he did and the whole thing stopped. N says that it's not that she was undemanding since the demands are made implicitly, otherwise she wouldn't have those or any friends; that the context determines her friends because together they can fend off intrusion in the college. F suggests that there must be a lot of explicit understanding if it's a mutual agreement not to talk?

N says that techniques imply appropriateness; for some people the grid is simply not appropriate and it's up to us to devise techniques individually suited. F says that"that means if we want to get anything out of the situation we must think of ourselves as techniques". T agrees that "we are more like techniques in that those of us who like the grid are using it as an opportunity to talk to somebody".

C says that in the last of his elicitations (conversation oriented rather than grid oriented) the conversation had been going for some time and then he said that will do for an element; she said "Oh, is that what you want" and output a list of similar experiences. F says that in his elicitations he began by talking about the technique as a way of defining the situation from his point of view. C suggests that it is preferable to simply have a conversation and do the grid rather than talk about it. F says it is important to say this is not a test and to outline what it is instead as a way of stating his expectation of the conversation. T suggests that is a way of containing the tension of the situation and is not necessarily the most appropriate way of starting and F agrees. N suggests that the elicitor should not define the process but instead enter into the content and steer towards the grid structure. C says that this is a real difference between himself and F in that F defines the process and then enters content whilst he enters content and then defines the process at what he takes to be an appropriate moment: he says that he enters the situation thinking that all I really want to do is get to know you, with the grid only an appendage to that conversation.

F asks N about his elicitation and he says that he just had a conversation and at times tried to write it down, which was difficult both from the point of view of disrupting its continuity and because of the difficulty of summarising what was said in a manageable number of words; he ended up by writing elements and constructs down.

Talking about our attitude to holding conversations with students, N says that it sometimes gets to a stage when you cease to be interested in the other person, and the grid becomes a mechanical exercise.

F asks about the feedback situation and T says that JB was not interested in what the grid had to say, instead wanted to continue the conversation he began in elicitation. C says that he got the person to tell him what the grid meant, beginning with the clusters and then going on to the interaction of the clusters in the grid itself. F says that LS would not accept feedback and talked about her dislike of analytical thinking. T says so she should and F says this ignores the dialectic of action and cogitation.

F asks about the reading records and whether such conversations parallel the grid. N talks about SA's way of feeding back records and F says that in contrast to the grid he dived straight into a content discussion. N suggests that the records differ from the grid in that a psychological rather than experiential language is necessary, and that this has to be established by example. F says that that's what we did not do with the grid but should do; that the conversation should be about two levels of the grid situation - what the grid can say as far as content goes and what the grid can say about the processes of elicitation and feedback. N says that he works the reading records in the reverse direction to grids, where he starts by talking about reading purposes and goes on to particular detail of the record, using the content as a reminder of process at any particular point. F points out that his observation of record feedbacks is that the content of the record is talked of first in that certain marks demonstrate windbacks, hesitations etc.

A resolution is made next time to record events in greater detail, say by having recorded discussions of each day's happenings.

4. IMPLICATIONS

The implications of the study can perhaps best be seen if an attempt is made to separate the many strands and levels that existed in the "conversational events", of which it was mainly comprised.

4.1. The Content of the Course

Although it is true in a formal sense, that the participants in this course were volunteers, it became clear during the course that most of them entered it with the feeling that they had been pressured or conned into taking part. It rapidly became clear that some of the students (mostly those doing science and maths subjects) felt that reading was not very important to them as a skill for pursuing their educational objectives. The other students (those pursuing arts or humanities subjects) seemed to share a fairly universal feeling, that their educational activities were boring, and irrelevant to their real life interests. Thus, to the extent that the content of the course; the texts, the Reading Recorder, the Flow Diagram and Purpose Taxonomy techniques were seen as related to formal educational objectives, the attitudes that prevailed towards other educational topics were automatically transferred onto them. As the general atmosphere of the course, and in particular the Kelly repertory grid "conversations", gradually revealed that the researchers were not committed to the rather narrow and formal definition of education and learning which the students usually associated with school and college training, they became more interested and involved. But not, unfortunately, always in the Reading-for-Learning content of the course.

In retrospect, the researchers discovered that they lacked certain skills and convictions which might have allowed them to pursue the stated intentions of the course. They should have realised that in the time allocated to the course it would (in the light of experience on previous courses) have been necessary for at least 80% of the time (a minimum of say 20 - 30 hours) to have been spent on reading activities, if significant change in Reading-for-Learning skill was to result. There was not sufficient time available to achieve such results and to offer the counselling facility. By appearing to offer the counselling facility, the course tapped a need which was much more central to the students' life activities than its explicit reading skills content. Given the "freedom to learn" approach of this study, the researchers felt that they had no option but to allow the students to pursue whatever they themselves defined as important. Reacting instinctively rather than reflectively, the students seemed to make one of five decisions:-

(i) .....The course is not of central interest to me and I don't believe that I am getting a real counselling opportunity.....

(ii) .....I believe I am offered a real counselling opportunity but I do not wish to face the "real life" consequences of taking it up.....

(iii) .....I believe I am offered a real counselling opportunity and I will try to exploit it at the expense of the offered course content.....

(iv) .....The course might be useful to me but there seem to be other things going on within it which are disrupting its reading purposes and I can't be bothered to sort these out and insist on my own priorities.....

(v) .....I came here to learn about reading and that is what I am going to do.....

The offer of freedom of choice within an educational setting was strange to these students. Originally they did not believe it and spent some time testing out the researchers to convince themselves that they could do what they liked. When they realised that they really were free to choose they were mostly unable to use their freedom productively.

4.2. Implications for Learning Conversations

Radical changes in orientation, attitude, purpose and skill in learning require considerably more sensitivity, care in timing, understanding of process, and commitment to the person, than it was possible to offer within the confines of this course. The personal construings of 'learning' for particular research members and students was such that it would have been counter-productive to focus exclusively on the specific skills of Reading-for-Learning. At the interface of the participative action research it became clear that the core issues of learning were life-based and located outside formal education. This interface was later explicitly displayed when the elicitation of significant learning events as elements for the Kelly grids, yielded 72% non-educational items. Of these, only 11% related to reading. Within the educational items, more were negatively than positively valued. Of the learning events in school (28%) only 4% related to reading (Tables 4 - 14).

The connections between "life", "education in life", "reading in education", "books within all educational resources"and"purposes for reading books", are non-trivial, complicated and tenuous. The way in which previous experience influences the motivation to learn from formal education is very complex and varies from individual to individual. Alienation from education was certainly very prevalent among this group. A much more adequate model of the processes of real-life human learning is needed before a teacher can judge when improved skill will lead to better performance which will reflect into changes in attitude and when the attitude is so negative that attention to wide ranging and intensely individual needs, must be negotiated before skill can be acquired.

The study has demonstrated that the Kelly repertory grid is a powerful aid in negotiating the nebulous needs experienced in general living, into educational purposes. The process of eliciting the elements for the grid is itself an aid to learning; it makes the problem area more explicit and concrete. As the constructs are elicited the participant is forced to consider, sometimes for the first time, the terms in which he or she has been intuitively thinking or feeling about the problem area. The process of interpreting the focused grid during the feedback tutorial session adds depth to this conversational process by highlighting the gestalt or pattern of relationships in the person's thoughts and feelings. The G.H. study (Paper 3) and this B. study, together begin to illustrate some of the ways in which repertory grids can be used.

The elements in a conversational grid define the area of negotiation. When the elements are 'books' the participant is encouraged to explore how his thoughts and feelings about books influence his ways of reading and learning from them. When the elements are 'purposes for reading' the participant is enabled to explore and extend his or her understanding of the infinite range of purposes that can be achieved by reading. When the elements are 'crucial learning experiences in my life' the participant begins to become aware of how he thinks and feels about 'learning'.

For these students the idea of education already carries heavily negative connotations, and the negotiation became fraught with difficulties. To provide an opportunity to change attitudes the conversation must be led into the 'life and education' area at the risk of losing contact with the immediate task. Or it must be led into the negotiation of immediate needs and purposes at the risk of consolidating an alienated attitude to education and thus endowing the Reading-for-Learning process with an unaccepted accumulation of negative feeling. The problem is one of short-term and long-term purposes. The immediate aims of 'nice' research results would have argued for staying with reading. There is also the nagging doubt that 'staying with reading' might produce a change in skill that would lead to a change in attitude and general orientation that might for some be a more lasting effect than would be achieved by a counselling approach. The longer-term aim of helping students to come to terms with themselves, life and education would argue for a counselling service within which more comprehensive learning conversations can take place.

As a tutorial device the repertory grid adds to the awareness, precision and power of the conversation, but it is no more than a tool for aiding the conversation. The nature of the learning conversation itself must be thoroughly appreciated before the grid can be used to enhance its quality. This very important issue forms the underpinnings of the developing science of learning conversations. This is articulated in Paper 5.

This final study in the series has clarified an issue which became apparent in the earlier studies. This issue is of crucial importance in education. It deals with the nature of the tutoring process. This process, when viewed within the broad classical 'Oxbridge' approach to tutoring, embodies three areas of concern:-

(i) Learning: interaction with content material/resource opportunities.

(ii) Learning needs: The person learning: interaction about the position of the learning in question, within the life-space of the individual.

(iii) Counselling: A concern with the personal problems of the learner inasmuch as they relate to learning.

Together these three define the nature of the tutoring activity, which also requires the tutor to recognise when to emphasise learning-to-learn. This focuses on the Learning Conversation and the gradual movement towards greater self-organisation in learning. The ability to conduct such tutorial conversations, however, is rare. This is because both its purpose and its process is largely undefined, and therefore remains implicit. The 'Uxbridge' approach to tutoring is revealing that a more adequate definition requires an understanding of how to negotiate these aspects and the judgment to know when to pursue one of them at the expense of others.

The researcher's experiences in the L. study (Paper 2) yielded some understanding of the requirements for an effective learning-to-learn conversation. In that study the emphasis was on the Reading-for-Learning process itself, but the analysis of experience showed that personal support (trust and buffering) played a crucial role in helping students to break into long-established non-conscious habits.

There is an urgent need for a more adequate conceptualisation of the tutorial conversation, in its wide-ranging (B-like) aspects, and how these can be effectively related to the more specific components of the (L-like) learning-to-learn conversation. Paper 5 elaborates on this theme and launches a theory of Learning Conversation and a paradigm for tutoring. Out of this emerges a new approach to teaching and learning which fosters the growth of the self-organised learner and the more fully-functioning person.

PAPER 4
APPENDIX 1

GERLIE ARMSTRONG

✓ ✓ × X

		NEW FRIENDS INFLUENCED MY WAY OF LOOKING AT THINGS	CHANGE OF SCHOOL... DIFFERENT ENVIRONMENT.	TALKING TO HISTORY TEACHER OUTSIDE SCHOOL	READING LORD OF THE RINGS	ROW WITH SISTER'S FIANCEE	GRANDMOTHER CAME TO LIVE WITH US	HEADMISTRESS AT PRIMARY SCHOOL DISLIKED ME	ARGUMENT WITH HEADMISTRESS	DINNER PARTY IN PARIS	DRUG RAID AT PUB WHERE I WENT EVERY WEEK	MOVING HOUSE ..DIFFERENT TYPE OF PEOPLE	BEST FRIEND MOVED AWAY AT AGE OF 13	LOSS OF FRIENDSHIP WITH CLOSE BOYFRIEND
CONTACT WITH NEW PEOPLE-IDEAS	LOSS OF SOMEONE	✓	✓	✓	×	✓	✓				✓	✓	✓	✓
OPENED UP NEW IDEAS.. NEW THINGS TO DISCUSS	OPPOSITE	✓	✓	✓	✓	×	X	X		×		×	X	X
MEETING NEW PEOPLE SIMILAR TO MYSELF	SOMEONE WHOSE CHARACTER CLASHED WITH MY OWN	X		X	X	✓	X	X		✓	✓	✓	✓	✓
FINDING OUT PEOPLES TRUE CHARACTER	FINDING OUT MY OWN CHARACTER	✓	✓	✓	X	✓		✓		✓	✓	×	X	X
CHANGED WAY OF SEEING PEOPLE	DIDNT	✓	✓	✓	X			✓	✓	✓	✓	×	X	✓
AFFECTED DEALINGS WITH OTHER PEOPLE	DIDNT	✓	✓	✓	×	✓	✓					✓	✓	✓
LOSING CONTACT WITH FAMILIAR PEOPLE & THINGS	MAKING CONTACT WITH NEW PERSON	X		X	X	✓	X	X	✓		✓	✓	✓	✓
LOSING SOMEONE CLOSE		X	X	X	X		X	X	X	X	✓	✓	✓	✓
CHANGED RELATIONSHIPS INSIDE FAMILY	DIDNT	✓		X	X	✓	✓	×	×	X	✓		✓	
OTHER PEOPLE ENTERING FAMILY CIRCLE	ME ENTERING SOMEONE ELSE'S FAMILY	×	×	×	X	✓	✓		X	X	✓	✓	X	X

- 1 -

PENNY PENNELL

✓	✓	×	X	COMPETITION WITH CLEVER BOY	JEALOUSY OF TEACHER'S KNOWLEDGE	STIMULATED BY FRIENDS' INTEREST	READING IN PREPARATION FOR LECTURES	STIMULATED BY LECTURERS	LEAVING SCHOOL	READING ANYTHING AROUND THE HOUSE	READING WHEN ILL	READ AND PLAYED ALONE	FATHER -ENCOURAGING ME TO BE ORIGINAL	READING FOR HOMEWORK NEVER DONE	"BEING NAUGHTY"
LEARNING THINGS NOT TO DO WITH ME		LEARNING THINGS THAT WERE TO DO WITH ME		X	X	X	✓	✓	×	×	×	×	X	✓	✓
PROVOKED ME TO THINK MORE		FOLLOWING BLINDLY		X	✓		✓	✓	✓	×	×	✓	✓	×	×
LIKE		DISLIKE		✓	✓	✓	✓	✓	X	×	✓	X	✓	X	✓
SUBTLE EXTERNAL INFLUENCE		PRESSURE TO LEARN		✓	✓	✓	✓	✓	✓		✓		✓	X	×
INCENTIVE TO LEARN CAUSED BY JEALOUSY		NO INCENTIVE		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	×
EFFECT OF THE ENVIRONMENT		PRESSURE (AGAIN)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X	×
PRODUCED GOOD RESULT		OBSTINACY		✓	✓	✓	✓	✓	✓	✓	✓	×	✓	X	✓
"GOOD THING" ...		"BAD THING" IN OTHERS ESTIMATION		✓	✓	✓	✓	✓	X	×	✓	X	✓	X	✓
FOR PERSONAL SATISFACTION		GENERAL INTEREST		✓	✓	✓	✓	✓	X	✓	X	X	✓	×	×
DID BY CHOICE		NO CHOICE		✓	✓	✓	✓	✓	✓	✓	×	X	×	✓	×
MY OWN CONDITIONS		CONDITIONS IMPOSED BY PARENTS & OTHERS		✓	✓	✓	✓	✓		×	×	X	X	✓	X

GWEN HUSTON

✓	✓	×	X

MADE ME FEEL I OUGHT TO DO SOMETHING	MADE ME FEEL I WANTED TO DO SOMETHING	GETTING IN VERY LATE ONE EVENING WHEN I WAS 13	LEARNING BIOLOGY	FRIENDS GETTING ENGAGED	SEEING A MAN POSSIBLY DRUNK	READING THE KLANSMEN	SISTER BEING OVERWEIGHT	REVISING FOR PHYSICS	ARGUMENT IN FAMILY	REALISING IT WAS A HABIT GOING OUT WITH A CERTAIN BLOKE	SEEING EASY RIDER
SEEMED INJUSTICES...CONCERN MANY PEOPLE...DIFFICULT TO SOLVE	PERSONAL CONCERN...COULD EASILY BE SOLVED	X	X		✓	✓	✓			X	×
MADE ME FEEL TRAPPED	NOTHING TO DO WITH THAT FEELING	X	×		✓	✓	✓	✓	✓	✓	✓
MADE ME A BIT CAUTIOUS	GUIDING EFFECT	×	X	X	X	X	✓	✓	✓	✓	✓
SOMEONE ELSE'S DECISION	OWN DECISION INVOLVED	×	X	X	X	X	✓		×	X	X
FEELS REASONABLE AT THE TIME	DONT FEEL REASONABLE AT THE TIME	✓	✓	X	X	✓	✓		X	X	✓
REALLY HAD TO WORK	ITS ME TRYING TO FIND AN EASY WAY OUT	✓	X		✓	✓	✓	✓	✓	✓	X

BETTY SINCLAIR

- 4 -

✓ ✓ ✗ ✗

		SPLITTING UP	GUYS WATCHING US WHO CRASHED	LEAVING NEEDLEWORK AT JUNIOR SCHOOL	GUY IN THE PARK	COMING TO REALISE I COULDNT HELP BRIAN CHANGE	FIRST DAY AT JUNIOR SCHOOL WITH NORTH COUNTRY TEACHER	HISTORY CLASS...HAVING TO STAY BEHIND TO WORK	READING JAMES BALDWIN	SEEING THE DEVILS	READING BRAVE NEW WORLD
ENABLED ME TO DO SOMETHING ABOUT CHANGING PEOPLE	NOTHING I COULD CHANGE IN MY BEHAVIOUR..JUST MY IDEAS	✓	✗		✗	✗	✗	✓	✓		✗
THOUGHT HOW CALLOUS PEOPLE ARE	THOUGHT HOW CALLOUS I AM	✗				✗	✓	✓	✓	✓	✓
PUT ME OFF AUTHORITY	NO EFFECT ON MY FEELINGS FOR AUTHORITY	✗	✗	✗	✗	✓	✓	✓	✓	✓	✓
OTHER PEOPLES BEHAVIOUR CHANGED MY ATTITUDES	IT WAS TO DO WITH ME RATHER THAN OTHER PEOPLE	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
REALLY COULDNT TOLERATE IT	PREPARED TO TOLERATE THE BAD SIDE	✗	✗	✗	✓	✓	✓	✓	✓	✓	✓
MADE ME CONSCIOUSLY WANT TO CHANGE	HAD AN EFFECT ON ME IN AN UNCONSCIOUS WAY	✗	✗		✗		✓	✓	✓	✓	✓
GAVE ME AN OUTLET TO CHANGE	BAD EXPERIENCES	✓	✗		✗	✗	✗	✗	✓	✓	✓

CLARE COMBES

✓	✓	×	X	BELIEF IN BEING ABLE TO EXPLAIN A POINT OF VIEW (JUSTIFY).THROUGH FATHERS INABILITY ..PREJUDICE	LEARNING FROM FRIENDS TO DEMAND EXPLANATIONS OF THINGS WHICH ARE NOT SELF-EXPLANATORY	LEARNING THROUGH UNDERSTANDING OTHER PEOPLES EXPERIENCES THROUGH COMMUNICATION	CHANGE IN TYPES OF PEOPLE I'VE MET..MAINLY TO DO WITH INCREASE IN NUMBERS & VARIETY	CHANGE IN APPROACH TO RELIGIOUS BELIEF BY MEETING PEOPLE CONCERNED	CHANGE THROUGH RESPONSE TO PERSUASIVE INDIVIDUALS. STIMULATING SUBJECT/TEACHER	LECTURE COMMUNICATION OF FACTS..NOTE TAKING.. RIGID	FOR AN ESSAY I USED A BOOK ON PARASITES	"BURY ME IN MY BOOTS" REINFORCED MY SOCIAL CONSCIENCE	FRIEND WHO GAVE ME CONFIDENCE TO EXPRESS MYSELF IN WRITING	THINKING OF DIVORCE AS A GOOD IDEA THROUGH FAMILY ARGUMENTS	INTEREST IN SOCIAL WORK FROM MOTHER	LEARNING FROM FIELD COURSE THROUGH ENJOYMENT THROUGH DIRECT EXPERIENCE OF NATURAL SURROUNDINGS.
FROM OTHER INSIGHTS	FROM MY OWN INSIGHTS	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	×	✓	✓
EMOTIONAL. SELF-EXPRESSION	UNEMOTIONAL ... IMPERSONAL	✓	✓	✓	✓	✓	✓	✓	X	X	X	×	✓	✓		X
LEARNING FROM MORE THAN ONE PERSON	FROM ONE PERSON IN PARTICULAR		✓	✓	✓	✓	✓	✓	✓	X	X	X	X	X	X	
THING LEARNED AS END PRODUCT	THING LEARNED LEADS TO FURTHER ACTIVITY (EXPRESSION)	✓	✓	✓	✓	✓	×	X	X	X	×	×	X		✓	X
INFLUENCE BY VAGUE IDEAS	INFLUENCE BY CLEARLY THOUGHT OUT IDEAS	✓	✓	✓	✓	✓	×	X	X	X	×	×	X		✓	X

DICK ARCHER.

✓	✓	×	X	HIT BY WOODWORK TEACHER - HATRED OF SUBJECT & TEACHER.	POETRY READING, LASTYEAR-GIVING UP.DISLIKE THROUGH NOT UNDERSTANDING	READING "MERCHANT OF VENICE" & SEEING THEATRE.	READING ABOUT GERM WARFARE. - BECAME A REALITY.	LEARNING TO PLAY GUITAR - NOT BEING LEFT BEHIND	BROTHER & SISTER BEING BORN. - GROWING UP,AUTHORITY,DUTY	5TH YEAR CLUB - GROWING UP THROUGH TALKING TO OTHERS	SUNDAY, GOAL, ACHIEVEMENT	P.E. AT SCHOOL, GOOD,FITNESS MANIA-LIKING THROUGH SUCCESS	FRIENDSHIP, SECURITY, COMING OUT OF SHYNESS
READING .. CONCRETE		A SENSE		X	X		✓		✓	X	X		
INCOMPREHENSIBLE... ACADEMIC		BASIC....SPORT			✓	✓	✓			X	X	X	X
GROWING UP .. THOUGHT.. AWARENESS		PART OF LIFE WHEREAS PAIR ARE NEW.. ACCEPTED			✓	✓	✓	✓	✓		✓	✓	X
DIFFERENT SORT OF ACHIEVEMENT		ACHIEVEMENT THROUGH LEARNING		X	X	X	×	X	✓	✓	✓	✓	✓
L I K E		D I S L I K E		X	X	X		✓	✓				✓
G O O D		SAD .... HATE		X	×	×		✓	✓			✓	✓
L I K I N G		DISLIKE ...DISCOURAGED.DISILLUSIONED		X	×	×		✓	✓		✓	✓	✓
LIKING... GROWING UP...AUTHORITY		HATE ... GROWING UP...EMBARRASSMENT		X	×	×	✓	✓			✓	✓	✓
FRIENDSHIP.."COMING OUT OF A SHELL"		NOT NECESSARILY FRIENDSHIP...SHY... EMBARRASSED.		X	X	✓	✓	✓			✓	✓	✓

- 9 -

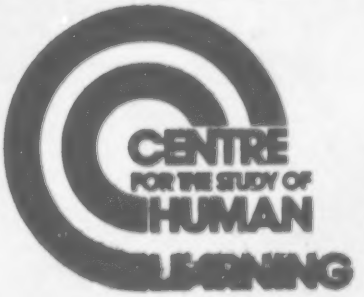
181

182

References

1. Thomas, L. F. (1976) Towards Achieving Personal Meaning. Chap.4. Focusing: Exhibiting the meaning in a grid. In Press.

2. Thomas, L. F. & Augstein, E.S. Harri-. (1976) Reference is also made to other Papers within the S.S.R.C. Report: The Self-Organised Learner and the Printed Word.



PROJECT SPONSORED
BY S.S.R.C.

THE SELF-ORGANISED LEARNER
AND
THE PRINTED WORD

PAPER 5 - ZEN AND THE TEACHING OF READING-FOR-LEARNING : TOOLS, PROCEDURES, LANGUAGE AND CONVERSATION.

BRUNEL UNIVERSITY,
Kingston Lane,
Uxbridge, Middlesex.

Laurie F. Thomas
E. Sheila Harri-Augstein

Page

1. STRUCTURE AND FREEDOM IN ACTION RESEARCH 1

2. THE RESULTS : WHAT ARE THEY?..... 2

2.1. The Conversational Approach 2

2.2. The Teaching of Reading-for-Learning: Some Assumptions 3

2.3. The Dimensions of a Conversation 4

2.4. Feedback and the Nature of Conversational Results 5

3. RESULTS : HABITUAL SKILLS, FLEXIBILITY AND SELF-ORGANISATION 6

4. RESULTS : TOOLS AND THE RAISING OF AWARENESS 8

4.1. The Reading Recorder 9

4.2. The Flow Diagram Technique 10

4.3. The Purpose Taxonomy 12

4.4. The Kelly Repertory Grid 13

4.5. A Taxonomy of Students' Reading-for-Learning Problems 14

4.6. The necessary Characteristics of an Awareness-Raising Tool 14

5. RESULTS : THE LANGUAGE OF THE LEARNING CONVERSATION 15

6. IMPLICATIONS : A SCIENCE OF LEARNING CONVERSATIONS 17

6.1. Levels in the Learning Conversation 17

6.2. The Three Dialogues 18

7. IMPLICATIONS : LIFE, TUTORIAL AND LEARNING CONVERSATIONS 21

7.1. Learning-to-Learn, Tutoring and Living 21

7.2. Limitations of the Learning Conversation 22

7.2.1. Negotiating needs into purposes 22

7.2.2. Personal support through the traumas of change 22

7.2.3. Self-evaluation and the Identification of a System of Referents..... 23

7.3. The Anatomy of Tutorial Conversations 24

7.3.1. Learning-to-Learn 24

7.3.2. Learning Needs 25

7.3.3. Counselling 25

7.3.4. The Learning Content 25

7.4. Life Conversations 26

ZEN AND THE TEACHING OF READING-FOR-LEARNING: TOOLS, PROCEDURES, LANGUAGE AND CONVERSATION

1. STRUCTURE AND FREEDOM IN ACTION RESEARCH

This is the last of a series of papers reporting the results of a project entitled "The Self-Organised Learner and the Printed Word". It has explored how people can be enabled to substantially enhance their use of reading as a learning skill. In the introductory paper (Paper 1) the basic problem was discussed. As with all skills, reading eventually becomes habitual and unavailable for conscious review. Most people, from 8 year olds upwards, become committed to one simple view of what learning can be achieved by reading. They have very little idea of how to monitor the learning process as they read, and are therefore either unsuccessful or massively redundant and wasteful in their reading efforts. Earlier pilot studies with people of various age groups had shown that these habits can be broken and the process of learning-to-learn again set in motion. The project was organised around a battery of tools developed in these pilot studies. They were designed to raise awareness of different aspects of the process of Reading-for-Learning. It was found that this awareness and some adequate model of the processes by which learning is achieved in reading form a necessary and minimally adequate starting point for change. An outline hierarchical model contained a series of feedback processes, each involving purpose, strategy, outcome and review. It was based on a generative view of reading as a process by which meanings are created in the reader and mapped onto the back hieroglyphics on the page.

Given a model of the process and a battery of awareness raising tools, the research team was faced with the question of how they should be used in offering courses of instruction. The aim of these courses was to use reading as a vehicle for enabling students to learn how to learn; to become more self-organised learners. Three approaches, based on different degrees of structure and freedom, were developed:-

(i) The Structured Approach consisted of a sequence of instructional modules which were conversationally supervised. The aim was to discover what additional procedures and materials would be required to convert the modules into a viable self-instructional 'package' (Paper 2).

(ii) The Guided Approach in which the model and tools were offered to a group on a lecture cum discussion basis and students were then free to choose their own Reading-for-Learning exercises and activities (Paper 3).

(iii) The Freedom to Learn approach in which a repertory grid-based counselling facility was offered to the students with minimal instruction in the model and tools (Paper 4).

Each of these approaches can be seen as an attempt to generate a particular type of Learning Conversation.

The studies reported in Papers 2, 3 and 4 illustrate the issues that surround the apparent fundamental opposition between the authoritarian and permissive approach. They show that the real issue lies elsewhere: in the nature of the control which is or can be exerted over the teaching/learning process. This is a question of structure and freedom; of an insightful modelling of the adaptive processes involved, versus a belief in rigid mechanisms. At worst, the structured approach ignores the adaptive (or mal-adaptive) responses of the learner and persists, blindly, in a standard sequence of instruction. At best, the structure offers an articulated network of choices within which the teacher is able to use his or her greater knowledge and experience as a resource in a joint search for greater personal understanding. The permissive approach easily degenerates into a situation of freedom without structure. Either consciously or through a 'laissez faire' approach the teacher abdicates responsibility for modelling the processes at work, and monitoring the diverse progress of each learner. Given no understanding, he or she can offer no

tutorial guidance. At best, the 'permissive' approach allows each learner to pursue his own interests and competences within an agreed, if open ended, structure. By modelling the process and monitoring the activities and experience of each individual learner, the teacher is able to maintain a flexible conversational control throughout the whole event.

2. THE RESULTS : WHAT ARE THEY?

Whilst some traditional 'before and after' measures are reported in earlier papers (Papers 2 and 3), action research focuses on a different type of result, that of the interactive and feedback processes of learning-to-learn.

2.1. The Conversational Approach

Earlier work had shown that a non-adaptive sequence of instruction, which typifies the traditional experimental paradigm, makes it difficult for the student to explore deeply ingrained non-conscious habits. The conversational approach of action research is more appropriate for learning how to learn. The instruction is adapted to the needs of each individual, not only in content but also in terms of personal support. Such an approach makes the collection of strictly comparable data from each student difficult. Each has been through a unique training experience and to the extent that they have been allowed to exercise choice may not have undertaken the same 'before and after' exercises.

This problem of measurement has exercised the research team throughout. In the L. study (Paper 2) the degree of control achieved allowed comparisons to be made on the 'long-term' follow-up criteria of academic performance, 'short-term' before and after-course tests, and immediate 'within module' measures of changes in skill. All these indicators showed startling improvements. The variable part of the learning conversation was hidden within the tutorial and support activity provided by the researcher around the activity on the modular materials. In the G.H. study (Paper 3) the nature of the control was different. It was not used to insist upon a standard sequence through the modules. It offered each student guidance in identifying and pursuing their own purposes. This made comparison on immediate measures impossible. But the short-term measures and long-term academic follow-up showed highly significant improvements. The results were more diverse than in the L. study. This was partly because a concentrated five day event allows less time to digest review and re-explore the implications of the experience than when the same time is spread out over two terms. It was also the result of differences of control. In the G.H. study attention was less centrally focused on academic learning. The Reading-for-Learning package concentrated on a hierarchy of academic learning purposes, but the repertory grid studies offered opportunities for exploring a more wide ranging and personally relevant taxonomy of purposes. Again, the hidden, unrecorded part of the experiment was the rapport that developed conversationally between researcher and students. In the B. study (Paper 4) almost no measures of specific reading or academic change were available. In terms of the physical science paradigm it was a failure.

Theoretical considerations of the work on the social psychology of the psychological experiment (Paper 1) has gradually convinced us that the fundamental difference between the physical science paradigm of research and the conversational paradigm is in the nature of the results which can and should be expected. When experimenting with non-adaptive materials the same process can be expected to produce the same result each time. Any differences can be traced to variations in method or measurement. The conversational approach recognises the adaptive learning capability of the 'material' under investigation in this project. Control is achieved by varying the procedure in response to an ongoing diagnosis of the points of mal-function. This ongoing sequence of diagnosis and action is based on an insightful use of the researcher's understanding of the processes he or she is attempting to influence.

Conversational research leads to conversational results. Basically, they have the same overall function as traditional scientific results, i.e. a reliable and validated understanding of the phenomena under investigation, tested by the power it offers either to predict or to intervene and influence. But in dealing with self-regulating and adaptive organisms such as animals and man, the same

events rarely lead to the same consequences. Hence a bald description of procedure and consequences offers little power in prediction and influence. The consequences of particular pieces of conversation are only epi-phenomena. The important consequences of conversational research are the models, processes, languages and tools, which allow the researcher/teacher to achieve his intended consequences in interaction with a changing and adaptive participant learner.

This has significant implications for educational research as a whole. What the teacher needs is the emotional and intellectual equipment that will enable him to negotiate educational purposes and then interact to achieve outcomes that fit these purposes.

This paper reports and reviews the conversational results of this project.

2.2. The Teaching of Reading-for-Learning: Some Assumptions

The interpretation of the Conversational Results (Sections 3, 4, 5, 6 & 7) is partly based on specific assumptions about teaching and learning. These are set out below:-

(i) The nature of the more important dimensions of the teaching/learning situation have been largely misconstrued. The assumption of the physical science paradigm has focused attention on actions and consequences in simple chains of cause and effect. Conceiving the situation as a heterarchy of feedback mechanisms, some within the individual and some between individuals, highlights a different set of phenomena.

(ii) The consequence of (i) is that many researchers, teachers, counsellors and therapists achieve their results intuitively or non-consciously. Their explicit description of what they are doing is inadequate and seems so both to themselves and others. They have a feel for events and situations which is based on a system which is fundamentally different from their explicit description of it.

(iii) Each learner starts his attempt to learn-to-learn from a different condition and cannot therefore be exposed to the same method, if this is conceived in terms of fixed training procedures from fixed starting conditions.

(iv) Even if it was possible to identify two or more learners who appear to be in the same 'condition of competence' in their ability to learn by reading, their progressive reaction to the 'learning-to-learn' procedures would inevitably lead to a differential result at some intermediate stage and (i) would then apply.

(v) The competence condition of the learner is not the most important component of his orientation towards an opportunity for learning-to-learn. His needs and purposes, his expectations and his state of knowledge largely influence how he approaches such an opportunity.

(vi) The learner is a conscious organism, he is at least partially aware of the situation and of his own interaction with it. The full implications of the social psychology of the psychological experiment must therefore be recognised and accepted.

(vii) The preceding assumptions have detailed some of the reasons why teaching based on the physical science paradigm fails. Attempts to 'purify' the sample of subjects and to build in self-adjusting procedures to compensate for the 'Rosenthal' effect are equally doomed. The learner knows that you know.

(viii) Unless it is to be defined trivially, learning is a creative activity. Self-organisation in learning, the aim of Reading-for-Learning Courses, makes it necessary to accept the learner as a person, whilst he or she is learning-to-learn. This necessitates a conversational approach to the teaching/learning situation.

2.3. The Dimensions of a Conversation

Whilst a striving after scientific respectability has seduced many researchers into more sterile views, the conversational approach to the learning/teaching situation has been a characteristic of many educational theories from Socrates to Carl Rogers and from Montessori to Gordon Pask. But most of these theories have been developed from a restricted view of what is allowable. Both Socrates and B. F. Skinner, for example, can be seen as dominating the conversations in which they take part. Socrates' subtle steering of the content and process of the argument drops his poor learner into one trap after another. Skinner decides upon his objectives and his reinforcement schedule and 'converses' his pigeon into playing ping-pong or his delinquent into more socially acceptable behaviours. Carl Rogers, on the other hand, allows the content to arise almost totally out of the learner's experience but insists upon his non-directive process of conversation as an awareness-raising activity. Montessori and Pask accept the need for adaptive interaction but tend to specify the desirable content to be learned.

In attempting to sketch out the range of patterns which a learning conversation may trace out, the widest possible space must be defined. Then our understanding of the dimensionality and structure of this space allows the path of the conversation to be tracked more accurately and similarities and differences to be noted. Conversational space can be described in terms of:-

(i) who is initiating and who is reacting to what, in the conversation;

(ii) how much of the conversation remains implicit in the head of one or other participant and how much is made explicit;

(iii) levels, areas and methods by which control is achieved;

(iv) the degree and predetermination of structure -

(a) in the content of the conversation,

(b) in the process and procedures of the conversation,

and (c) in the shared verbal and non-verbal language;

(v) the power and precision of the tools used to raise awareness:

This description assigns the L., G.H. and B. studies as explorations of different areas of the conversational space.

When the dimensions of the Learning Conversation are better appreciated, it becomes possible to understand the part that 'tools' can play in it. They are aids to conversation. Whether Freud's method of free-association, Rogers' unconditional positive regard, Skinner's reinforcement schedules, or the Flow Diagram and the Read Record are considered, their purpose and usefulness becomes more apparent when they are viewed as special tools which can, by mutual consent, be introduced into the Learning Conversation. They allow 'special effects' which the participants cannot achieve unaided. But to obtain the special effects and the benefits which accrue from it, the tool is not enough, it must be skilfully used. Conversation changes the status of procedures; even punishment can serve positively as a tool if it is a totally accepted conversational technique, and praise may produce negative effects if the conversational setting in which it is used is inappropriate. The physical science paradigm with its assumptions about 'cause and effect' is very difficult to break. In human interactions events themselves do not produce predictable consequences. It is always the meaning, the interpretation of the event, which is the conversational cause. Conversational tools are used within systems of meaning.

2.4. Feedback and the Nature of Conversational Results

In the traditional experiment the measuring devices directly yield the data from which the results are constructed. In a conversational experiment the measuring devices yield data which is interpreted and fed back to influence or control the ongoing process. This is probably the defining characteristic of the conversational technique but it contaminates the data as independent indicators. The tools all yield data which is used in this way. Focused Grids, Flow Diagrams, Read Records and Purpose Taxonomies provide feedback to the learner about the nature of his Reading-for-Learning processes. Recognition of the change between 'before' and 'after' measures as diagnostic data to be used within the experiment focuses on the conversation itself as the result.

This does not turn cause and effect on its head, although it may appear to do so. The attempt to predetermine the outcome of the conversation partially failed in the G.H. study (Paper 3) and completely failed in the B. study (Paper 4) because the self-organising, self-determining nature of the learning-to-learn activity made it difficult to predict the variety of individual learning purposes which would emerge. In theory, one could attempt to produce more and more complex measuring devices which would 'record everything'. But not revealing the 'before' measures to the learner does not prevent him from making his own inferences from the testing experience. Except under very special circumstances, the process of making too many 'before' measurements seriously dislocates the conditions out of which the later part of the Learning Conversation must develop. It is only the experimenter who sees the 'before and after' measures as results. For the learner they are simply events occurring at two arbitrarily chosen points in the conversational process. The 'before and after' change is therefore only a partial and inadequate method of labelling a conversation. It is only in the most trivial way 'the effect' of the conversation. This is particularly true when the 'effect' is seen to be a change in a long-term follow-up measure such as academic performance. Thirty-five hours is a very small proportion of the six months' life conversation which has intervened. All kinds of other experience, self-assessments and value judgments, have been incorporated during the process of living.

The process of the Learning Conversation is the area in which 'results' occur. The participants' views about how habits are formed and how they can be broken partially determine the course of the conversation. How they model process determines how they act. One important subsidiary area of result is the emergence of a more useful model of habits and skill.

The process of conversation has therefore to be taken seriously. They are not occasions for the exchange of idle chit-chat. They should be determined, purposeful, highly skilled and creative interactions. They must also be responsive occasions. The responsibility for creating this state of affairs lies mostly with the participant teacher. But in electing to attend an educational course the learner accepts certain responsibilities to play his part in the learning conversation. There should therefore be a clear negotiation of the teaching/learning contract, and clear opportunities at certain stages for re-negotiation, including the option for either participant to opt out.

Given this, a Learning Conversation is a systematic job of work, capable of as rigorous an analysis and description as any other area of scientific investigation. The main results to be expected from conversational studies are scientific analyses of the process of the Learning Conversation itself and the conditions in which it can flourish.

3. RESULTS: HABITUAL SKILLS, FLEXIBILITY AND SELF-ORGANISATION

Some view of the fully-functioning person is necessary as an image or model on which conversational interventions can be based. The model should facilitate the diagnosis of a wide range of learning incompetences and should be described in terms which indicate appropriate interventions. One result of these three studies is the emergence of such a model.

(i) In Paper 1 a model of the process of Reading-for-Learning was discussed. This is now placed in a wider context.

Habitual ways of learning are usually non-conscious and unavailable to review. Most attempts to voluntarily change them are unsuccessful.

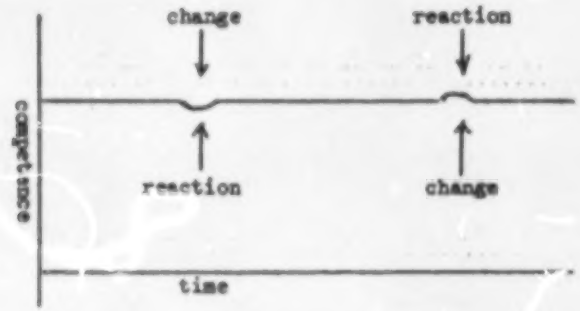


Fig.1. THE MAINTENANCE OF STABLE HABITS

The system creating a certain level of competence or incompetence, depending on one's standards, is ultra-stable. Feelings, beliefs, perception, experience and behaviour form together into a monolithic self-validating system. Fig.1 shows how when any attempt is made to change it the whole system compensates, creating strong pressures towards returning to the stable condition.

In all three studies there was, over and over again, evidence of this self-sustaining capacity of long-habituated skills. Faced with the opportunity to change, and with evidence that they are beginning to acquire a new awareness of their activities, the students' performance dropped, and symptoms of boredom, tension, anxiety or disinterest appeared. They later reported feeling vaguely threatened and disturbed by their own increasing incompetence.

In the L. study immediate measures of successive performances within one training module usually showed evidence of a temporary drop in performance and/or rate of reading before a new more effective strategy was acquired.

In the G. H. study, one girl was very disturbed when her first read record, which revealed a very slow, detailed item read tactic, was followed by a much quicker read tactic on a next text with much the same level of competence. This awareness of her initial incompetence led her to practise intensively on factual item exercises. After some practice, her performance regressed, although she could talk with a much greater awareness of her own processes. At this point she became very depressed and required intensive encouragement to continue. She then began to show improvement which achieved much higher performances in both quality and speed than any she had previously experienced.

During the B. study a number of students became rather anxious and disoriented after the session in which the Kelly Grid was fed back and it was only after the subsequent counselling sessions that they began to show significant improvement in motivation and commitment to themselves.

There appears to be a very general phenomenon. When a habitual skill is disrupted, performance drops and the learner becomes emotionally vulnerable. He requires support and discipline from inside or outside to continue through the trough of this process of change and to enter into the positive re-constructive phase of learning-to-learn.

Thus, one conversational result is an increased insight into the nature of change. Whether it be a radical life re-organisation or a change in ability to select specific facts whilst scanning a text, the performance graph will exhibit the properties shown in Fig.2.

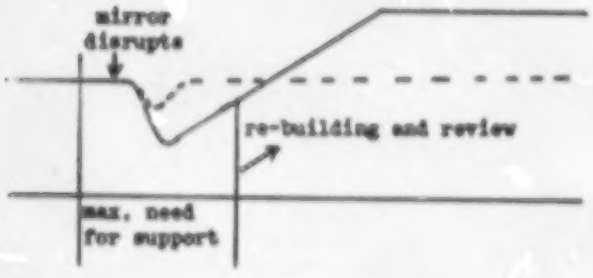


Fig.2 THE DISINTEGRATION OF PERFORMANCE BEFORE IMPROVEMENT

Unless understanding and support is offered during this period, the student is not likely to be able to sustain the change and will revert to old habits.

(ii) Any cognitive activity can be usefully classified as either habitual or flexible. Reading and conversational activities all take on one of these two forms. Flexibility has many advantages but if it is too tentative and exploratory it can be very time-consuming. Habits occupy no attention but people can easily become imprisoned by them. Coping similarly and repetitively with the same situations turns flexibility into habitual modes of operation. A major characteristic of self-organised learners and fully functioning people is the resoloution of this dilemma. Creativity, syntony, problem solving, all indicate a similar process. It is conveniently designated the 'hour-glass' phenomenon.

For any unit in the system, the flexible cycle of operation can be viewed as follows (Fig.3) :-

Phase 1 The construction or identification of viable alternatives, i.e. a heterarchy of possibilities.

Phase 2 The choice or decision to pursue one alternative allows one organised hierarchy of control to swing into action. This may form a well-organised non-redundant skill or it may be in a more innovating and rudimentary state.

Phase 3 When the consequences of the coherent activity have accrued, there follows a more relaxed open-ended phase of reflection and review.

Flexibility depends upon these three phases. If only the convergent activity occurs the habitual activities automatically swing into action without conscious thought. No alternatives are generated and no reflection or review generates the materials out of which subsequent choices can be created. If the convergent phase is missing, no effective activity takes place. It is the rhythmic alternation between provisionality and decisiveness at various levels in the Reading-for-Learning process, that produces the dynamic tension between stasis and action that is characteristic of a Zen master.

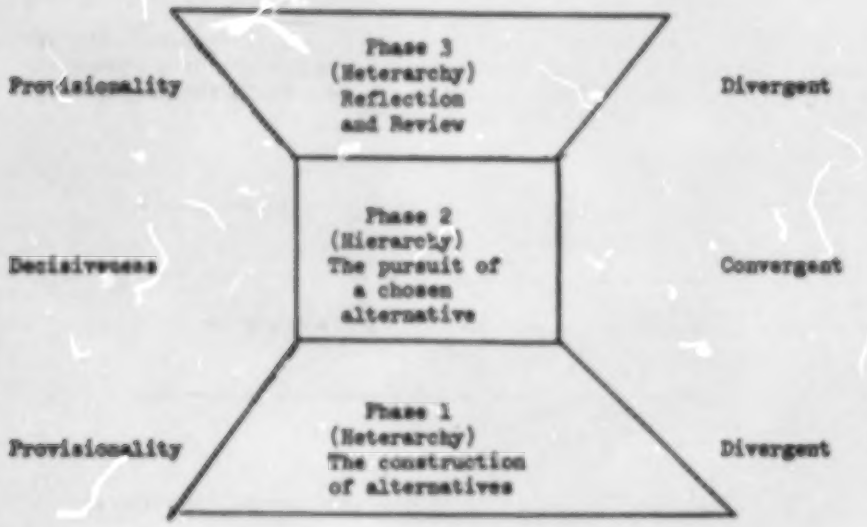


Fig.3. THE 'HOUR-GLASS' PHENOMENON

(iii) Fraser Reid, in a Paper presented to the Society for Research in Higher Education (S.W. Regional Branch), entitled 'A Preliminary Evaluation of the Advanced Learning and Reading Course' described the change process as follows:-

> "Miller's work suggests that to construct a more effective plan the learner must dissemble existing plans, often at many levels of complexity, before recombining them into an alternative structure. He will, as it were, be at some stage caught between plans. Invariably this leads to sudden and marked drops in performance, a period of depression, disinterest, anxiety, and feelings of hopelessness. At the point where the distance forwards is equal to the distance back, there are very strong temptations to reinstate old plans and to reject new methods on the basis that they can be seen not to work. The only solution to this situation is perseverence in the learner, and tolerance and support from the trainer."

Relating this phenomenon to the T.O.T.E. system offers two additional insights into the process of change:-

(a) Learning can be flexible at some levels and fixed and habitual at others. Recognising the T.O.T.E. organisation offers powerful diagnostic insights (see Paper 1).

(b) Self-organisation in learning consists in having the 'hour-glass' process operating in phase at various levels in the T.O.T.E. system. The construction of viable alternatives, reflection and review upon the consequences of decisive action, create both an awareness and confidence that fosters self-organised activity. The encouragement of self-organisation requires insight into these processes.

4. RESULTS: TOOLS AND THE RAISING OF AWARENESS

When people read they are seldom aware of how they are reading, nor of the cognitive and affective processes which underlie their behaviour. To the extent that they are unaware, reading becomes a marionette-like mechanical activity. Even if they try to develop awareness, enormous difficulties are experienced in observing their Reading-for-Learning processes. One outstanding experience is that they are unable to remember themselves reading. This is the situation from which they must start their learning-to-learn conversation about reading. Only by guiding each learner back into contact with his own processes can he become aware of the existing state of his skills and bring these under review. The

development of the awareness of 'self in process' has been ignored in western psychology. It had not been fully realised that a state of Zen-like self-consciousness is important as a resource for change and personal growth. This is as relevant at the skill level as it is for the whole person-in-life.

Developing an awareness of one's own learning processes is difficult. It is necessary to divide one's attention between the object being observed and the self-observing. In reading it is necessary to divide one's attention between the meaning in the text and how one is attributing meaning to it. This self-awareness in Reading-for-Learning cannot be achieved without tools for self-observation. These open up a language for articulating reading experiences and behaviours. Whilst the Zen approach to the learning of skills is deeply experiential, the awareness-raising tools combine an experiential approach with a 'harder' behaviouristic one. Rigour and precision (western style) is thus built into the awareness-raising conversational activity.

Tools and conversational techniques for 'mirroring' the learner's reading process back to him, enable the learner and researcher to share in the development of a learning-to-learn language.

The tools developed in the project each accentuate one particular aspect of the reading process. Each aspect can be explored at different levels of organisation. At any one level, the tools combine to integrate all aspects into a coherent awareness of the total process. Using the tools conversationally involves moving between levels within any one component of the Purpose-Strategy-Outcome-Review model of the process, and moving across these components at any one given level.

4.1. <u>The Reading Recorder</u>

The Reading Recorder was developed from earlier devices used to investigate reading behaviour. It is now a robust, simple-to-use machine which is commercially available on a limited basis. Developments in techniques for recording behaviour include a prototype mini-recorder which works directly on to the page of a book, and various paper and pencil methods, a few of which are published in 'Developing Your Own Reading' of the Open University Reading Development Course, (The Open University Press). In its various forms it is the tool specially designed to make the behavioural processes of reading explicit. But a read record thrown haphazardly into a Learning Conversation does not allow a participant to achieve significant states of awareness. Even when awareness of the process of reading is achieved it does not always lead to new levels of competence.

The read record shows how time was spent as a learner read a text; it shows changes in pace, hesitations, skipping, backtracking and note-making. But the uninitiated learner is unable to make accurate inferences about these reading events from the raw record. <u>Paper 2</u> shows numerous examples of read records. The teaching participant in the conversation must either be prepared to offer these interpretations, or to help the learner acquire the perceptual skill to make them for himself. This may appear trivial, but the quality of the Learning Conversation depends on this sensitivity to the information on the record. The verbal ability to talk about a read record is not the same as the perceptual ability to recognise significant events in the process of reading from the pen-recording emitted by the machine.

Describing the behavioural events to a learner, does not create an operational awareness of the processes experienced in reading. This is achieved as follows:-

The learner is given the text which he has previously read for learning and for which a record of his activity has been made. He keeps his eyes/finger on the text and is talked through the activity by the teaching participant. For example:-

> ".....You started at line 1 and read evenly through to line 23 where you began to slow down and read at about half your original speed until line 37. Here you stopped for 10 secs..... was this of any significance for you?"

Part of the conversational skill is to empathise with the reader. Is he re-living the reading experience, or is he simply going through the motions of reproducing the behaviour? Talking a person back into the Reading-for-Learning experience is an important component of the awareness-raising technique. Whilst there is obviously no objective check on the validity of the re-creation of the experiential process, there are numerous corroborative indicators. Spontaneous remarks which relate to the content of the text and to the monitoring and decision-making processes, together with the reader's apparent recognition of his earlier experience, all add up. Part of the skill in the Learning Conversation is to be able to talk a reader back into his earlier process with some evaluative commentary attached, so that he is able to review the process of learning. This requires a meta-language in which to articulate the process (Section 5). During the talk-back, the learner becomes more aware of the components of the Reading-for-Learning process and of the integrated relationships between these. As he moves towards greater self-organisation he comes to appreciate that part of the process of reading depends on:-

(i) orienting to the general message;

(ii) sampling the text for relevancy;

(iii) selecting and re-organising items of meaning;

(iv) evaluating this meaning against his self-generated purposes.

He also discovers that many factors contribute to influence the quality of the eyeball to print interaction and the attribution of 'structures of meaning'. For instance,

(i) interests, prior knowledge, and the articulation of purpose;

(ii) text processing skill;

(iii) the criteria for evaluating the quality of the structure of meanings which are the outcomes of reading.

This 'language of awareness' becomes the key for learning-to-learn. It allows the learner, often for the first time, to fully recognise their intuitive learning experience and behaviour as an area of potential skill. A more detailed description of the conversational use of read records is to be found in 'Towards a Theory of Learning Conversation and a Paradigm for Conversational Research', Technical Report No. 91 at the Centre for the Study of Human Learning.

4.2. The Flow Diagram Technique

This technique was originally developed to exhibit in a structured form, the non-linearity of the meanings in a text. Whilst the words run serially the reader is expected to store facts and relationships and use the cues in the text to create a complex pattern of meaning in his head.

In its original form the Flow Diagram Technique contained four headings, or categories, for analysing and displaying texts:-

(i) link;

(ii) main theme;

(iii) qualifications;

(iv) elaborations.

These exhibit a 'structure of meaning' particularly suited to the purpose of summarising a text. As the projects have developed, new sets of headings have been found to facilitate alternate purposes or to deal with particular types of text, e.g. narrative, dialogue and certain aspects of poetry. However, as the conversational work continued, the constraint of retaining the linear order of the meaning units as laid out in the original text, was found to inhibit the

exploration of memories and ideas. A new display system 'structures of meaning' was therefore developed. This forms the topic of another series of the Centre's publications, and the underpinnings of a new area of conversational research. The elicitation and display of personally relevant 'structures of meaning' has wider-ranging applications to the development and exchange of uniquely individual viable meanings and is potentially a powerful addition to the growing library of learning-to-learn tools.

The original Flow Diagram technique was developed as a research tool to serve as a reference or basis against which to measure various levels of learning from the text (Paper 1). This research use was so clearly successful in clarifying some of the reasons for hesitations, skipping and backtracking on the reading record, that it gradually became incorporated into the courses.

A Flow Diagram of a text can display various levels of structure. The analysis of the reading of a paragraph makes use of a Flow Diagram in which the units of display are the sentences. Analysis of the reading of a chapter can be achieved using a Flow Diagram in which each unit in the display is a paragraph. For very detailed work a word by word analysis of a complex sentence can throw considerable light on basic reading difficulties.

The early conversational use of the Flow Diagram used an expert or authoritative view of structure. A panel of 'content experts' was used to draw up a Flow Diagram of a text. Ambiguities and disagreements were resolved and this 'Expert Flow Diagram' became the referent for conducting a second Learning Conversation around the read record. Having created an awareness of the experiential process of reading in the first conversation, the Flow Diagram was introduced and the learner was talked through his record again. This time the purpose was to map the process of reading onto the meaning of the text. Considerable light is thrown on the process of reading as the learner begins to explore how changes in rate of reading, hesitations, skipping and backtracking relate to the experts' view of the 'structure of meaning' in the text. Again, a considerable effort of empathy is required if the conversation is to offer the reader real experiential access to this process of attributing meaning to the text.

One of the results of the course was to gradually develop an expertise in the use of this aid to conversation. This expertise was itself examined and exposed in the research conversation (Paper 4). Here the results are reported in outline.

One difficulty with the Flow Diagram Technique was that experts did not always agree about the 'structure of meaning' in a text. After considerable soul-searching, which in retrospect looks foolish, it was recognised that there is no 'structure of meaning' in a text. There is only the structures of meaning in the head of the author and in the heads of each reader. The linear sequence of letters, spaces and punctuation on a page require an incredibly complex system of translation and interpretation, before any match appears between any two readers or author and reader. The only reason that experts could agree on the texts offered was:-

(i) in its original form the Flow Diagram offered a very simple category system,

and (ii) one shared interpretive system, that of orthodox science, meant that they could easily agree on their meanings.

However, student readers continually commented upon the usefulness of the Flow Diagram charting technique as a method for making meaning explicit. The conventions of the charting technique allowed one interpretation of the meaning of a text to be compared directly with another. It thus became an aid to conversation in its own right. Student and student, student and teacher could use it as a method for exploring the alternative structures of meaning which they attributed to the same sequence of words on a page. This led to the development of a whole new area of expertise in conducting Learning Conversations. The processes for negotiating meaning were gradually made explicit.

The charting conventions in the original form of the Flow Diagram were recognised as embodying a particular view of the purpose for reading and the development of charting conventions to suit wide-ranging reading purposes offers a rich field for development.

4.3. The Purpose Taxonomy

Pilot studies preceding this project, had identified the need for a taxonomy of learning purposes by which a learner can be guided into recognising a greater range of alternatives. One such taxonomy is offered as an appendix to Paper 2. However, attempts to use this conversationally required an excessive amount of introduction and explanation before the student could make operational sense of this abstract system. Although useful for the articulation of purposes for reading, taxonomies which embody the view of an 'expert' or a group of experts, fail to take the learner's own uniquely individual repertoire of purposes into account. Three developments took place:-

(i) The training modules used in the L. study (Paper 2) were constructed on the basis of the taxonomy and thus effectively operationalised it.

(ii) The Kelly Repertory Grid was used to help students explore their own purposes and to expand and elaborate them (Paper 3).

(iii) The purpose hierarchy was used to integrate the long, medium and short-term purposes for reading. This hierarchy was refined and developed as a purpose/resource grid in 'Purpose and Comprehension' - The Open University Reading Development Course (The Open University Press).

The question of learning purposes and how these relate to the tactics and strategies of reading is another essential component of any effective Learning Conversation. Learners of all ages and at many different levels of education appear to have very restricted ideas about learning purposes. This is probably a commentary upon the restricted views of learning embodied in the educational system and the examination system as a whole. Bloom's taxonomy of educational objectives was originally used as a vehicle for provoking our learners into considering alternative purposes to those which seemed habitual to them. Various developments and alternative specific reading taxonomies were also considered. But most of the schemes or programmes underlying these purpose taxonomies proved too mechanical for the purpose of a Learning Conversation. It is in the nature of learning that you cannot know what you are going to learn before you learn it. The teacher may define a learning purpose, but the learner does not necessarily understand it nor does he necessarily have to agree with him. Thus the learner's operational purpose is negotiated and clarified between him and the text as he reads it. A tentative but progressive negotiation of purpose and the adjustment of the process of reading to meet the gradually clarifying purpose, is an essential component of flexibility and real competence in learning-by-reading. Fixed reading habits entail pre-determined and unnegotiable purposes.

The process of need negotiation (Paper 4) and the encouragement of the growth of a personal and growing taxonomy of learning purposes compatible with those needs, requires subtle development over a long sequence of conversations. One result of these studies has been a gradual clarification of the nature of this negotiation within the conversation as a whole. It is gradually becoming clear that many of the emotional blocks to learning which students experience, for example to mathematics, classic literature or science, might be better and operationally defined as a malfunctioning system for identifying needs and translating them into learning purposes (Paper 4). When the non-conscious need and the stated purpose conflict an emotional block results.

4.4. The Kelly Repertory Grid

Papers 3 and 4 have demonstrated how the repertory grid can be used within the Tutorial and Learning Conversations. One development of grid technology has been the focusing technique referred to in Papers 2 and 3. This involves a two-way cluster analysis of elements and constructs which puts like with like and highlights the pattern of meaning. Members of the Centre have systematically expanded various conversational procedures involving the grid. Briefly, these developments can be listed thus:-

(i) The Grid as Cognitive Reflector

A variety of methods for encouraging an individual to explore, extend and differentiate his personal construct system. Methods for exploring inferences and relationships that lie within one grid or between grids containing different sets of constructs relating to a shared range of convenience.

(ii) Grids for Exchanging Meanings

Various techniques and procedures can be used for systematically exploring how the experiential worlds of two or more people map onto one another.

(iii) Group Grids

The grid can be used to encourage structured exchange among a group by getting them to co-operate in creating one shared grid.

(iv) D.E.M.O.N.

Computer-aided conversations with yourself.

(v) Consensus Grids

Paper 3 describes a method for construing the construings. This is a technique developed within this project to enable a group of grids to reveal the meanings which they share.

The Repertory Grid was originally designed as a conversational technique to be used in therapy. but there has, among psychologists, been a tendency to treat it as if it were just another test. Using the grid in Tutorial and Learning Conversations has revealed the wide variety of skills needed to help a person tap hidden feelings, prejudices and habituated assumptions. This is a major theme in the work of the Centre and extends well beyond this particular project. A selected list of issues that are important in grid-based conversations follows:-

(i) The first stage in any grid-based conversation is an adequate exploration of the problem area which it is intended will be the focus of attention. Many grid conversations founder because of misunderstandings on this point.

(ii) The elicitation and agreement of a representative set of elements. This requires much more care and sensitivity than is usually recognised by the new user. The elements should be central, specific and meaningful and together should define the problem area to be explored.

(iii) Conversational Elicitation of Constructs controls the participant's viewpoint, keeping his attention focused on those aspects of his thoughts and feelings which he and the tutor feel to be relevant. When there is any doubt about relevance a construct should be included. The skill is to concentrate attention relevantly without putting ideas or feelings into the participant's mouth, head or heart.

(iv) Decisions about the use of grids for cognitive reflection, exchange, group purposes or identifying consensus should be made in consultation with the participants.

(v) The elicitation of a grid, elements, constructs and responses (Papers 3 and 4) is an opportunity for the systematic exploration of the problem area. The procedure should be used gently to encourage reflection upon the problem; not harshly to bring about premature closure.

(vi) When grids are fed back in their focused form, the participant is offered an opportunity to reflect upon his whole system of feelings and thought. The conversation should sustain him in this exploration of his own psyche.

4.5. A Taxonomy of Students' Reading-for-Learning Problems

During the L. study it became clear that students were experiencing a whole variety of reading difficulties, but had no language in which to make these explicit. After the L. courses were finished, an open-ended questionnaire, interview and autobiographical study was carried out to explore this area more thoroughly. This resulted in two additional tools being constructed:-

(i) The Group Interview Technique,

(ii) The Autobiographical Technique.

These form the theme of two papers on 'A Taxonomy of Reading-for-Learning Problems' which are published as Centre Reports.

Together, these two techniques form powerful initial awareness-raisers of reading difficulties, as these relate to the habits, attitudes and strategies of Reading-for-Learning.

4.6. The necessary Characteristics of an Awareness-Raising Tool

It has been claimed that the library of awareness-raising tools, described in sub-sections 4.1 to 4.5, can only be successfully used for facilitating substantial change, if and when they are used conversationally as tools for raising 'Zen-like' awareness of aspects of the process of Reading-for-Learning.

What does the conversational use of such tools require? Minimally, it depends on:-

(i) Some observational record or externalisation of an aspect of learning (Purpose-Strategy-Outcome-Review).

(ii) A display and procedure for 'talk-back' which is detailed and specific enough to enable the learner to validly re-construct the experience of learning.

(iii) This should include the ability to move up and down between levels in the hierarchy and to relate and integrate components of the model at any level.

(iv) A language in which the description of behaviour and experience can be articulated in sufficient detail and accuracy to create a new level of awareness of one's own process.

(v) The incorporation of this new awareness into an integrated model of process so that effective alternates can be constructed.

(vi) The testing out of alternatives in real situations.

(vii) A system of evaluation which:-

(a) indicates the relative merits and demerits of each alternative,

and (b) throws up indicators of the conceptual directions in which more adequate alternatives might be sought.

(viii) A procedure for weaning the learning away from the tool, replacing it with an enhanced perception and language through which the learner can achieve the same effects unsupported from the outside.

5. RESULTS: THE LANGUAGE OF THE LEARNING CONVERSATION

In one sense the Learning Conversation is all conducted in one language: the native language of the participants. But whilst acknowledging all the dangers (real and imagined) of offering new systems of jargon, one outstanding feature of learning conversations and success in conducting them, is that there appears to be a real need to negotiate a system of referent language with each new participant.

One reason for this is that much of what gets talked about during the Learning Conversation is completely new to the participant. Most people find it impossible to talk about their own learning processes, learning purposes and reading methods in anything but the most general bizarre and inexact terms. This is because they have only very rudimentary and bizarre models of the learning process and almost no language in which to describe their experience to themselves. This variation of the *Whorf* hypothesis continually arises in each new conversation. It poses various problems:-

(i) There is a very difficult question raised by the non-verbal nature of many of the communications which facilitate a Learning Conversation. They may develop a non-verbal language which is both more immediately relevant and productive than the more explicit verbal languages. Such non-verbal languages tend to be very personal and difficult to share.

(ii) If there is no shared view (or theory) of the processes, purposes and methods of learning, each term must be differentiated and mapped onto shared experience if effective conversation in that area is to occur.

(iii) If one dominant participant brings a pre-conceived language and theory into the situation, it is very difficult for the other to create a personal understanding out of it, unless the process of language/experience/meaning negotiation is made explicit.

(iv) As with any intense specialist group, the effectiveness of a Learning Conversation seems to develop hand in hand with the emergence of a private technical language in providing a more exact and parsimonious vehicle for the articulation of experience and exchange of experience, new levels of previously inconceivable competence are achieved (Zen and the Art of Motorcycle Maintenance).

As has been seen in an earlier section, each tool or aid to conversation requires its own technical terms. The explicitness of these tools seems to facilitate recognition of the need for these languages, but how each person picks it up and uses it is a question of personal style.

More importantly, and with more associated difficulties, there is a need for a language in which to talk about learning; and to talk about it in ways that break long existing habits, create greater flexibility and operationalise the processes of change.

No claim is made for the following language other than that it has developed out of a fair amount of varied experience which has always been fairly intensively reviewed. Other systems of language (Pask, Skinner, Bruner, Rogers) have been raided and cannibalised to produce a composite, as no one seemed sufficient. It is convenient to consider the language at three levels (Fig.4).

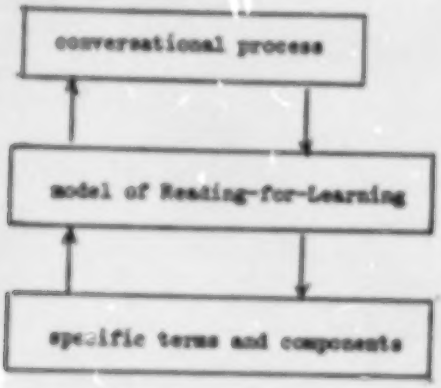


Fig.4 LEVELS IN A META-LANGUAGE FOR ACHIEVING CONVERSATIONAL CONTROL

In order to convey the flavour of this language, examples of terminology at the three levels is offered:-

Conversational Process .....process, feedback, Learning-to-Learn, tutorial, mirroring, referent, support, self-generated feedback, trust, buffering, empathy, personal knowing, tacit knowledge, shared meaning.....
Model of Reading-for-Learning .....needs, hierarchy, heterarchy, PURPOSE, strategy, tactics, outcomes, taxonomy, structures of meaning, internal review, generative process, meaning attribution, prior knowledge.....
Specific terms PURPOSE.....rote, translation, interpretation, extrapolation, incorporation, supplementation,..... .....recognition, recall, re-construction, problem solving, analysis, synthesis, criteria, referents, levels, internal cues, external cues, specific facts, factual items, main points, summarise..... strategy.....read record, hesitation, flip back, flip forward, rate of reading, change in rate, line number, position in text, structure of meaning..... .....tactics, smooth, search, small item, large item, check read..... .....monitoring, decision point, input, data processing..... outcomes.....criteria, multiple choice, objective test, recall, recognition, free response, close procedure, comprehension, summary, essay-type..... .....Flow Diagram, link, main theme, elaboration, qualification, example, dialogue, argument..... .....meaning structures, items, relations clusters, mapping, pattern inter-personal, two person sharing.... .....written, verbal, behavioural, internal, external.....

Table 1 SOME EXAMPLES OF THE META-LANGUAGE

6. IMPLICATIONS: A SCIENCE OF LEARNING CONVERSATIONS.

The experiences of the researchers, as reported in papers 2 and 4, highlight the need of a better understanding of how 'conversation' can be used to help people improve their capacity of learning. Some of the processes that contribute to the effectiveness of learning conversation have been identified and it has become apparent that a science of conversation can be articulated. A methodology is emerging which could, in time, become as rigorous as the procedures of experimental science. It accepts the proposition that the subject is construing with the experimenter whilst the experimenter is construing the subject. The process cannot, therefore, be procedurally specified to take a pre-determined form, but must be participative and fully interactional. The current studies have revealed two directions in which this science of conversation could be developed:-

(i) Different levels of discourse can be identified in a learning conversation. These can be specified and examples examined to identify the criteria which indicate when to move from one level to another.

(ii) Within the conversation at one specific level e.g. learning-to-learn, it has been found useful to identify three inter-woven dialogues.

6.1. Levels in the Learning Conversation.

It is useful to think of a learning conversation as taking place at three separate levels. The central conversation is about the topic to be learned; this Tutorial Conversation can proceed in its own right so long as no significant learning problems accrue. In practice there are almost always difficulties; some of these relate to the topic being learned and can be handled at the tutorial level, but the more serious problems associated with learning do not arise within the structure of the subject matter. Emotional blocks, problems of motivation, boredom, lack of interest etc., seem to emerge from the learners' thoughts and feelings about the subject matter and how it relates to real life as they experience it. The study described in paper 4 illustrated these issues. When the learning conversation moves to this type of issue, we have referred to it as a 'Life Conversation'. Another type of learning problem can be seen when a learner seems to know what he wants to learn, but is unable to successfully plan and carry out his intentions. Under these circumstances the conversation moves towards questions of learning skill i.e. towards questions of method, tactics, strategy and outcome. This level of conversation we have designated the 'learning-to-learn Conversation'. Most of the work reported in papers 2,3, and 4 is concerned with this level. Thus, the subject matter is discussed in the tutorial conversation, the relevance of the learning is examined in the life conversation and the strategies and skills of learning are reviewed in the learning-to-learn conversation. Section 7 of this paper elaborated on these three levels.

Here, it is useful to identify the idea of a learning contract. Assumptions about the willingness of the learner to take part in the teaching/learning activites are made in all types of situation, from the school-room to Management Development Programmes, and from the educationally sub-normal to University Under-Graduate courses. Each student also has deeply ingrained beliefs about his or her capacity to sustain self-organised learning over various periods of time. One important component of a course of teaching is the extent to which the learner is expected to develop his or her capacity for increasing self-organisation as the course progresses. Every teaching/learning situation contains implicit assumptions about the size and complexity of the learning contract which the student is expected to sustain, without intervention of support from members of staff. The concept of a learning contract is useful in specifying the exact nature of these expectations. For example, if a staff member is using a text book as the basis of their course they may expect the student to be able to read a chapter

to discover the factual information contained within it; or they may assume that the student can look up and read a series of references in the library, compare and contrast these, thus producing a critical evaluation; or the implicit learning contract may assume that students can sustain a varied programme of reading alongside the course without detailed supervision and testing by the teacher. It is important that the student learns to think in terms of the variety of possible learning contracts open to him. At best this simultaneously enables him or her to identify those learning contracts that are implicitly assumed by the teaching staff, whilst remaining free to construct additional personally relevant contracts that enable him to pursue his own learning purposes whatever these may be. A contract consists of three parts:-

(a) A definition of learning purposes.

(b) A plan and the skills for achieving this purpose.

(c) Some criteria for assessing how well the contract has been carried out.

6.2. The Three Dialogues.

The focus of the conversation is the reflection of process; the learner reflects on his learning; the researcher monitors this whilst reflecting on her management of the conversation. The researcher's function can be described as MIRRORING THE PROCESS TO THE LEARNER. Mirroring leads to heightened awareness and this enables the learner to explore his skill, so that he moves toward greater competency and creativity.

The language of mirroring is trimorphic, generating three forms of dialogue: one dialogue deals with a COMMENTARY ON PROCESS; another with SUPPORTING THE LEARNER DURING REFLECTION, and the third dialogue is concerned with REFERENTS FOR EVALUATING LEARNING COMPETENCE (Table 2).

1. Commentary on Process
2. Support during the uncertainties of reflection
3. Referents for reviewing learning competence.

Table 2 TOWARDS A THEORY OF LEARNING CONVERSATIONS: THE FORMS IN THE LANGUAGE OF MIRRORING.

The management of each dialogue depends on a different set of rules. These rules have been partially worked out.

Dialogue 1. Commentary on Process

This takes place at two levels. At one level a process and feedback language is being negotiated. The learning process is observed using the hard evidence provided by the awareness raising tools, and a theory offered by the researcher. The whole process is reviewed for effectiveness. PURPOSE, STRATEGY, OUTCOME, REVIEW (PSOR) became components of this process language. At another level the researcher offers a metacommentary on this language negotiation. The importance of developing a theory (or model) for interpreting the evidence of the records is stressed. (A PSOR model becomes one of "n" possibilities as the researcher and learner negotiate.) The need to generate one's own feedback is also emphasised. MODEL AND FEEDBACK BECOME THE COMPONENTS OF THIS METACOMMENTARY.

Whilst the RESEARCHER IS OFFERING THIS METACOMMENTARY ON PROCESS, THUS RAISING THE LEARNER'S AWARENESS OF IT, SHE IS ALSO PROVIDING THE EXPERIENTIAL TOOLS FOR THE LEARNER TO COMPREHEND IT.

A characteristic feature of this dialogue is THE MARKED ALTERNATION BETWEEN EXTERNALLY OFFERED FEEDBACK AND SELF-GENERATED FEEDBACK. Whenever the learner was unable to generate feedback the researcher intuitively offered this. It was realised, retrospectively, that this dimension of structure and freedom was crucial for the process dialogue. The question is whether the learner's view of the teacher as a source of structure is an expected stereotype for that which should pertain in a learning process, or is it a relevant intrinsic part of the process?
This issue of when to offer freedom was monitored throughout the study.

In helping the learner to generate his own dialogue by constant metacommentary on process, a shift towards personal autonomy took place. The learner began to set his own Purposes, interpret the Read Records, evaluate Outcomes and review the Whole Process. He INTERNALISES THE PROCESS DIALOGUE. HE GENERATES HIS OWN LANGUAGE, SELECTS HIS OWN FEEDBACK AND BECOMES DISCIPLINED IN ASSESSING HIS OWN COMPETENCY.

The Management of this structure - freedom dimension of the dialogue is polymodal. This involves moving between directive, guided and discovery modes. Directive intervention involves the researcher in taking over the interpretation of the Read Records. In guidance a PSOR model is offered within which the learner interprets his own Read Records. For discovery, the learner is encouraged to develop his own model for interpreting the Read Records. The researcher takes on the role of mentor, offering counter arguments or propositions or even occasionally as madonna, shielding the learner from structure, whilst he generates his own.

The management rules for this dialogue remain largely intuitive, but relate to a catalytic view of mirroring. The overall management aim is to CATALYSE THE LEARNER'S OWN STRIVINGS FOR AWARENESS, enabling him to invent his own construings of his learning process and to generate his own personally relevant feedback. Table 3 summarises this commentary on process.

a. Negotiating a language for describing process and a metalanguage for reflecting on process.
b. Movement between offered feedback and self-generated feedback.
c. Structure and Freedom in the management of the conversation.

Table 3 COMMENTARY ON PROCESS

Dialogue 2. Supporting the Learners during Reflection

People become uncertain when exploring their learning processes. They become over-anxious when testing out the limits of their skill and understanding. In attempting to improve their level of proficiency they often start by getting worse! As a result they retreat into the safety and security of stasis or known routines of learning. THE SUPPORT DIALOGUE IS CONCERNED WITH HELPING THE LEARNER TO REMAIN A SPECTATOR OF HIS OWN PROCESS LONG ENOUGH TO EXPLORE IT IN DEPTH.

Many psychosocial factors are involved in support. Developing mutual trust in the tutorial relationship and 'buffering' the exploration of process are two outstanding events. Trust proved to be important in bridging that void between the uncertainty of being in process and the security of stasis. The researcher and learner worked hard and long to achieve this relationship. Assessing the boundaries of permissiveness in the dialogue proved difficult. Was it over-indulgent or was it relevant to explore wide-ranging emotional, social and intellectual issues? As the student gradually recognised an honest intention to help him explore and review his own competence, trust in the relationship developed.

In lowering awareness of stress the researcher 'buffered' the learner's anxious state and this enabled him to convert the energy locked up in anxiety into creative tension. Thus supported he explored hitherto unknown areas of skill. Buffering depended on withholding structure and offering unconditional positive regard, empathy, and congruence (Rogers 1961). This often proved to be a most traumatic and exhausting experience for both participants.

Managing support depends on developing sensitivity to the changing inner states of the learner. Cues such as posture, facial expression and remarks such as 'I hate Flow Diagrams', 'that Read Record is wrong - I didn't read that way' were used as indicators for moving into a support dialogue. Table 4 summarises this dialogue.

a. Breakthrough to mutual trust
b. Buffering: converting anxiety into creative tension.
c. Sensitivity to the state of the learner in managing support.

Table 4 SUPPORT DURING THE UNCERTAINTIES OF REFLECTION

Dialogue 3: Referents for Evaluating Learning Competence

Having encouraged the learner to develop a language for exploring process and supported his in depth exploration of it, the researcher still leaves him with a dilemma. If he is to rely solely on his own evaluation how will the learner ever know the actual degree of skill which he has achieved?

He can compare with others THROUGH EXCHANGING AND DISCUSSING READ RECORDS, FLOW DIAGRAMS AND PURPOSES. In progressing through a sequence of personal interpersonal and group review (Rogers 1973) the learner can relate his own assessment to a wider field of public assessment. Managing this dialogue is concerned with helping him to choose appropriate referents. This evaluation dialogue is summarised in Table 5.

a. Using yourself as referent
b. Using another as referent
c. Using a referent group and Managing the choice of referents.

Table 5 REFERENTS FOR REVIEWING LEARNING COMPETENCE

Any sample of Learning Conversation may contain components of any of the three dialogues. Obviously they interrelate complexly and richly in a conversational event. DURING THE CONVERSATION, THE RESEARCHER ACTS AS ARTICULATOR OF ALL THREEDIALOGUES, AS THE LEARNER EXPLORES THE RESOURCES. IN MOVING TOWARDS GREATER SELF-ORGANISATION THE LEARNER INTERNALISES THE DIALOGUES AND LEARNS TO ARTICULATE THESE FOR HIMSELF.

Conversational encounters during the course of the project have enabled learners to realise that 'the printed word' can be read in many different ways, for many different purposes and that each of these strategies and purposes has a place in a flexible repertoire of learning competence. Related studies at the Centre have also shown that writing, listening, discussion, thinking and doing can each be viewed as skills by which learning competence can be achieved, through conversational encounters.

People differ in the ease with which they can internalise and sustain each of the three dialogues, which make up conversational events. Effective internalisation of the Learning Conversation sets the learner well on the road to learn within the 'Tutorial Conversation' and from life. The self-organised learner and the fully-functioning man/woman is free to create new learning experiences throughout life.

7. IMPLICATIONS: LIFE, TUTORIAL AND LEARNING CONVERSATIONS

The three studies have together revealed the need for a more wide-ranging view of the learning-to-learn process than was originally envisaged. The process of Reading-for-Learning had been seen as a separable end in itself; but this action research involvement with students as uniquely individual learners, revealed that serious disruption of any one area of stabilised competence (or incompetence) inevitably has repercussions through the learner's whole life-system, or Kelly-type core constructs. A refusal to take up questions at these other levels can result in:-

(i) a withdrawal from interaction,

(ii) a continuation with a growing distraction of personal worries,

(iii) a loss of performance and involvement.

To cope with this inadvertent consequence of learning-to-learn, the idea of the Tutorial Conversation was formulated (Paper 4). In some ways this can be seen as an extension of the existing theory of Learning Conversations and it was treated in this way in the L. study (Paper 2). However, the B. study emphasised some of the essentially different characteristics and techniques required to sustain an adequate conversation at this level. Using our own methods reflexively upon ourselves, the research team have found it useful to create a terminology which differentiates three levels of conversation. This is shown in Fig.5.

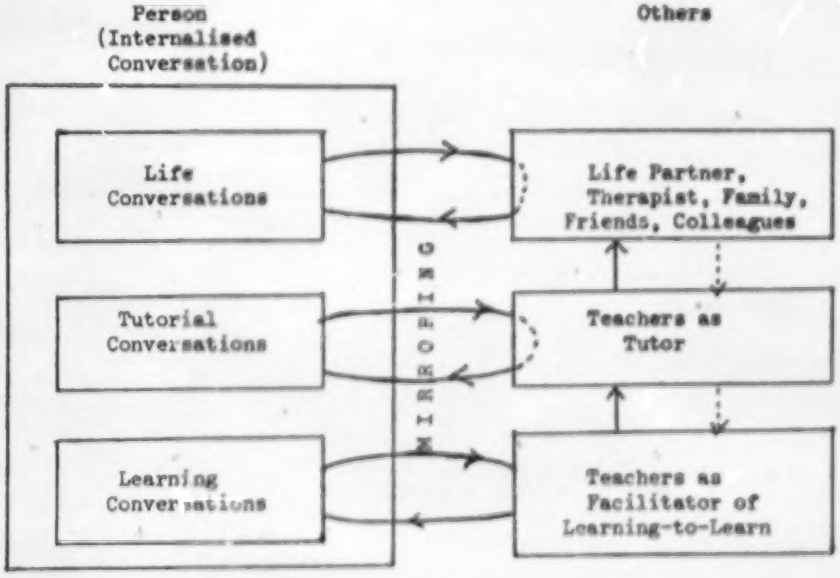


Fig.5 THE CONVERSATIONAL PROCESSES

7.1. Learning-to-Learn, Tutoring and Living

The Learning Conversation is primarily concerned with skills. In this project the skill under investigation has been reading. In other projects within the Centre, Learning Conversations have been applied to other skills, such as writing, listening, discussion, doing, thinking and feeling. The three dialogues of the Learning Conversation are about process, support and referents for quality. These specifically apply to the detailed interactions by which habits can be broken, reviewed and rebuilt, in each skill area. The Tutorial Conversation on the other hand, is more concerned with the long term

strategic aspects of learning: how the student plans learning goals and executes learning purposes over a period of weeks, months or even years. It is here that the learner's other concerns interact with learning to produce the welter of personal problems and emotional hang-ups that beset so many students.

The Tutorial Conversation focuses on this area. In Paper 4 it was suggested that it had three nodes of attention, namely:-

(i) the learning content relevant to the needs,

(ii) the identification of learning needs,

(iii) a counselling activity designed to help the student handle personal problems that interfere with learning.

This process of the Tutorial Conversation has not been pursued in the depth and precision that has been given to the Learning Conversation and the project has avoided any inspection of the process of moving out of education into life. Current studies within the Centre are concerned with these longer-term conversations.

7.2. Limitations of the Learning Conversation

The most well developed dialogue within the Learning Conversation is that concerned with raising awareness of process. Most of the development work on tools and procedures has been concentrated on this area. The three studies have each in their own way highlighted the importance of other factors, for achieving change in the learning process. In Papers 2 and 3 these associated areas have been referred to as personal support through the traumas of change, and self-evaluation and the identification of a system of referents. In Paper 4 the importance of negotiating needs into purposes was introduced as yet one more crucial aspect of learning.

It is in pursuing these three areas of concern that the Learning Conversation continually seems to be threatened with disintegration or dispersal. Care and skill has continually to be exercised in keeping the focus of attention on reading and learning. The conversation makes sorties into these other areas in order to define the space needed to change the learning skill. But as demonstrated it is all too easy to find that students' concern pulls the conversation out of control and the focus is lost.

7.2.1. Negotiating needs into purposes.

This is an important part of any Learning Conversation. All too often a student will start learning, only to find that he becomes disinterested. Sometimes this is because he has not attempted to clarify and redefine his purpose as his learning progresses. But often it is because he has thoughtlessly accepted an institutional purpose without exploring what his real needs are. One limit of the Learning Conversation is arrived at when the discussion slips over into an exploration of the person's life-space to help him re-organise his understanding of his own involvements, commitments and freedoms to be able to better identify his needs.

7.2.2. Personal support through the traumas of change.

This seems to be another necessary component of an effective Learning Conversation. When awareness of process releases the whole system of self-perpetuating mechanisms that secure the habit, disruptive emotions are released. This allows associations with the original circumstances in which the skill stabilised to flow once again. These associations and anxieties rapidly set off a chain reaction to cope with these worrying thoughts and feelings. Again, the Learning Conversation must be contained. The focus is the change in skill, and the support offered should continually orient the learner back towards this problem. This identifies another limit of the Learning Conversation. Explorations of the emotional release offered by

the breaking of habits can disrupt the focus of the conversation and destroy its effectiveness in achieving its original purpose. The 'hour-glass' phenomenon identified in Section 3 offers a guide to the management of the Learning Conversation. A flexible approach identifies and constructs viable alternatives but then a decision must be made. This is the point at which the conversation turns back to the job in hand. If the client feels the need to construct and pursue alternatives that lead away from the central concerns, the limit has been reached. This is where the different modes of instructions come into play. It may be appropriate to coerce him back, in the expectation that he will appreciate the consequences well enough to be thankful for it later. Or, the Rogerian non-directive approach may work better. This is a question of diagnosis and style.

7.2.3. Self-evaluation and the Identification of a System of Referents.

The question of self-evaluation raises some crucial issues about the location of referents inside and outside the learner. Students do not conceive of the need for referents so they tend to be accumulated in a haphazard and non-conscious way. Some use anybody that happens to be around to look for approval or stimulating reactions as a sign of their own worth. Others use staff members in an indiscriminate way, simply aligning on their criteria whatever these may be. Others rely on their own spontaneous reaction to steer their interests and activities. When the Learning Conversation raises questions about what constitutes adequate learning, students often become confused. They will refer to tests and exams as embodying the standards at which they are aiming and yet will talk glibly about the inadequacy of exams and pursuing their own interests, simultaneously. This is a most difficult area to examine because very few people are aware of how their intuitive referent system influences them. It is an area that could be examined best with the more advanced repertory grid techniques. The whole question of how referents relate to criteria and purposes pinpoints a central weakness in current thinking about learning. On the one hand, sociological and psycho-analytic approaches will emphasise the efforts of socialisation and early family influences on the construction of internal referent systems, which unconsciously influence the individual for the rest of his life. On the other hand, the behaviourists and cognitive psychologists emphasise defectives and intentions which are purely task defined and content oriented. The real learner, faced with becoming aware of his own processes, soon begins to experience conflicts. His intuitive evaluation processes are out of step with his purposes, expressed in content terms. The Learning Conversation must help him to recognise this and to explore and experiment with ways of becoming more experientially free. Again, similar considerations apply: the 'hour-glass' paradigm is relevant but the focus of attention must remain firmly on the learning exercise. If personal roots are tapped, care must be shown in transplanting them, but the conversation concentrates on the flowering. This defines one more limit of the Learning Conversation. Fig.6 defines these limits.

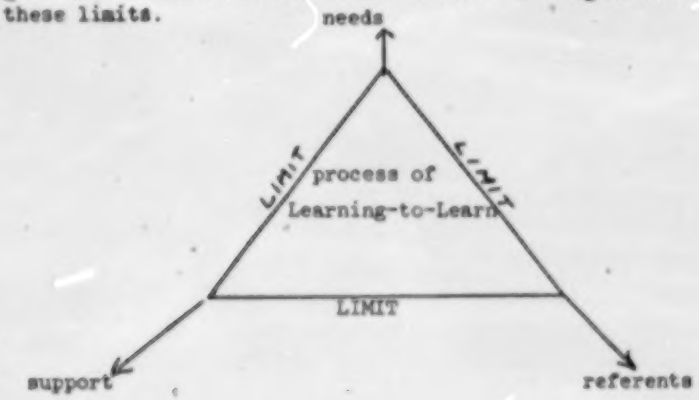


Fig.6 LIMITS OF THE LEARNING CONVERSATION

The limits around the Learning Conversation are defined by this raising of personal and content issues. If these require considerable time and resources to resolve, the rhythm of the Learning Conversation will be unbalanced and disrupted. If the conversation simply ignores them the alienation, withdrawal and distraction are the likely consequence. There is a danger that the encounter ceases to be a Learning Conversation if these issues dominate, at the expense of the primary purpose. The Tutorial Conversation was conceived as a separate encounter for pursuing these issues.

7.3. The Anatomy of Tutorial Conversations

Each aspect of the Tutorial Conversation has relevance for Learning-to-Learn and for achieving self-organisation in learning, but it is useful to define these separately from the Learning Conversation.

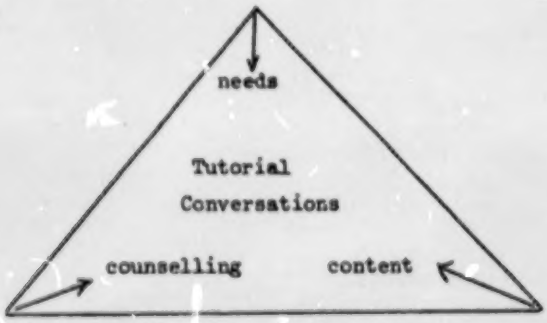


Fig.7 THE COMPONENTS OF THE TUTORIAL CONVERSATION

7.3.1. Learning-to-Learn

It is convenient to conceive of the Tutorial Conversation as a learning conversation which is concerned with the longer-term strategic components for learning-to-learn, as it extends over a longer period of time than the learning conversation. There is therefore time to take up those issues which have been shown as extending outside the limits of the Learning Conversation. But it is not just a catch-all for personal problems. Its positive function is the quest for greater self-organisation in learning. Fig. 8 attempts to show in simplified form the relationship between the Learning and Tutorial Conversation, within the paradigm of Learning-to-Learn.

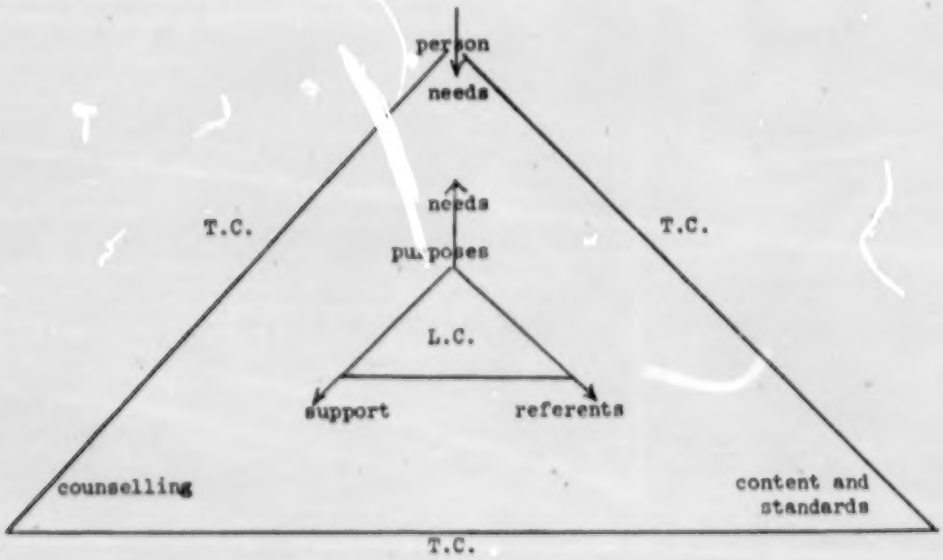


Fig.8 THE TWO CONVERSATIONS

The levels of anticipated performance and alternate deployments of learning skills form part of the Tutorial Conversation, Listening, Reading, Writing, Talking, Thinking and Feeling, can all be viewed as learning skills. Tutorial Conversation can help a student decide when to sit down and think, when to talk things over with fellow students or a staff member and when to spend time in the library.

It can also, but rarely does, raise the issue of when a student should spend time raising his level of competence in any one skill. It is when such decisions are made that the Tutorial Conversation refers back to the specific Learning Conversation. It was the inadequacy of this negotiation that led to the "flight from reading" exhibited in the B. study (Paper 4).

7.3.2. Learning Needs

The central theme in a counselling-cum-tutorial conversation is the negotiation of learning needs. As with most areas of difficulty the apparent problem is not necessarily that which turns out to embody the most significant issues. Many people spend too much time 'doing' and not enough time seriously considering what should best be done. Many people worry about areas of difficulty, but unproductively. They have neither the skill to conduct the Tutorial Conversation within themselves nor the independence to recognise when they should seek advice.

Most people do not understand themselves sufficiently well to be able to explore their long-term interests, involvements and satisfactions to be able to clarify learning needs which are both achievable within their chosen environment and likely to fulfil their long-term personal, physical and social needs. This explains both the high rate of drop out from voluntary courses and the boredom, alienation and rebellion exhibited within compulsory education. In the negotiation of needs the Tutorial Conversation approaches therapy. Care must be taken to identify the boundary.

7.3.3. Counselling

As conversations between teacher and learner become more profound and long-term, the counselling component looms larger. It contains the extended component of the support needed during the Learning Conversation but it is more than this. It expresses the student's striving to create a viable relationship between him and his experiential and actual worlds. It is connected to the identification of needs and an orientation towards his or her subject and career. The B. study (Paper 4) uncovered a vast need for this type of service. But as a separate activity it is suspect. Only when integrated into the purpose of the educational institution and in particular into the process of helping people become more self-organised and fully functioning, does it take on a realistic role. Left isolated for too long it becomes an uneasy mix of pseudo-tutoring and pseudo-therapy.

Counselling should therefore be built in as an integrated dealogue within the Tutorial Conversation.

7.3.4. The Learning Content

The appropriate choice of what should be learned and where the best resources are to be found has often been seen as the responsibility of the 'expert'. All the learner has to do is to learn what is good for him. The Tutorial Conversation brings these decisions into the learner/teacher conversation. A growing understanding of the available sources, social, personal and physical, is one aim of the conversation. But use of resources is more important. Eventually the fully developed learner takes over responsibility for initiating and generating this exploration of the sources. Most of the Tutorial Conversation then goes on in his own head but he knows when to ask for help and advice.

7.4. Life Conversations

Some people seem to develop the knack or ability to live fully; learning from experience and continually 'finding themselves' in each new activity. They may be dons or dustmen, moguls or mechanics, princes or printers; what they have is the ability to create Life Conversations around them. With them, life takes on structure and purpose; it is both exciting and fully engaging. Education is only justifiable if it adds to the number of 'nodes for Life Conversations'; and thus contributes to the quality of life and the competence of individual enterprises and society as a whole. Thus, Learning and Tutorial Conversations are only supportable if they contribute to greater capabilities in learning from and with experience.

This pilot work seems to indicate that even a small shift in emphasis from teaching to systematically encouraging the development of learning skill would produce a massive educational pay off. Several tentative moves have been made in this direction, but usually these have depended on the flair and intuitive skill of a few gifted individuals. The beginnings of a systematic methodology is emerging. The arena is wide open for researchers to build on this and develop it step by step. The beginnings of a science of "Learning, Tutorial and Life Conversations" backed by a theory and some specialist tools now exists. The methodology which can be developed in as many ways as there are individuals who concern themselves with educational and the conversational enterprise.

The education system needs to creatively re-construe its purposes, methods and function. Learning-to-Learn should become a central theme enabling learners to become more competent and self-organised. This would release the subject-matter experts to concentrate on exhibiting the exciting nature of their own enthusiasms. Once Learning-to-Learn is seen as a legitimate exercise in its own right creating autonomous learners, then all the traditional instructional techniques take on a different aspect. Learning contracts and programmed texts, item banks and work placements, computer aided instruction and overhead projectors, all fall into place as resources which staff and learners can use to optimise their purposes.

Those who are involved in decision making on educational expenditure in these stringent times, should take careful account of this approach which promises a pay-off out of all proportion to equivalent expenditures in other areas of educational endeavour. Not only does learning performance improve in the educational situation but it can carry over, continuing to pay off with each new opportunity to learn in life, at work, on courses and in leisure.

The cumulative rewards for our rapidly changing, crisis ridden industrial society in increased competence, flexibility and versatility, open up new vistas for human destiny. Looking further ahead into the human prospect, if man is to survive beyond doomsday and shape a new kind of industrial society, the vulnerable individual must be given a chance to learn to become responsible and skilled in creating new kinds of social contract. Whether changes in the destiny of humans is brought about by Malthusion type checks or by wisdom or foresight, depends largely on the experience we now offer for learning-to-learn in the classrooms, lecture rooms, studies and laboratories of our educational institutions.